APPENDIX C: **Public Comments**

C.1 Response to Public Comment Letters/Email Messages

1. NEPA COMPLIANCE: DOCUMENTATION/REVIEW LEVEL.

Several commentors expressed the opinion that a BSL-3 facility at LLNL would allow for experiments with a broad spectrum of biotoxins and biological materials/agents. They believed that this would be a new program for DOE and LLNL that, if inadequately analyzed before proceeding, could endanger the workers and the community. Commentors indicated that the draft EA provided only boilerplate assertions that the risks would be negligible, and relies on adherence to procedures, some of which DOE laboratories have not followed in the past according to the commentors. Consequently, they believe that a further environmental review in the form of a project-specific Environmental Impact Statement (EIS) should be conducted. Some of the same commentors were of the opinion that the proposed project represents an integrated new program area for the DOE, and as such, a Programmatic EIS (PEIS) should be prepared to review the effects of undertaking work in this "new" mission area. Several commentors expressed the opinion that the purpose and need for the proposed action at LLNL is without precedent, and the commentors called for a complete NEPA review (PEIS) of the NNSA Chemical and Biological National Security Program (CBNP) which some referred to as the "Chemical and Biological Nonproliferation Program."

Response
LLNL has been a national focus of bioscience research for almost four decades. Bioscience researchers at LLNL already safely conduct research at BSL-1 and BSL-2 levels in disease susceptibility, prevention, diagnosis, treatment, and rehabilitation and in support of National Institutes of Health (NIH), DOE, and NNSA mission requirements, LLNL already works on research aimed at detection and identification of biological warfare agents. The Biology and Biotechnology Research Program (BBRP) at LLNL also contributes to a number of high-profile national-level efforts in both health-related bioscience research and in developing defenses against the potential use of biological-warfare agents against either our civilian population or military forces. This work involves close cooperation with other national laboratories, DOE, and other agencies (e.g., health, military, and law enforcement). Currently, research conducted at the existing LLNL BSL-2 laboratories involves anthrax (Bacillus anthracis) and plague (Yersinia pestis). This research includes supporting development of tests for quick identification of plague based on a DNA signature and the development of decontamination reagents. Operation of a BSL-3 facility would not constitute a new or unique role for LLNL, would not be inconsistent with existing DOE mission work, and would not be unique or without precedent.

The EA analysis considered effects relating to human health, ecological resources, air quality, noise, waste management, soils, geology, and seismology. Effects to these resource areas were minor in nature. Human health effects are expected to be no different from those at other U.S. Centers for Disease Control and Prevention (CDC)-registered laboratories operated according to CDC and NIH guidelines. Those laboratories experience very infrequent worker accidents

with minor or no consequences to workers and members of the public. Socioeconomics, visual resources, transportation, utilities and infrastructure, cultural resources, environmental justice, and environmental restoration resources were identified as being unaffected by the construction and operation of the BSL-3 facility; or as being minimally affected and inherently mitigated by the project design; or as being minimally affected and temporary and intermittent in nature. Because the potential effects of the project are not significant in terms of context and intensity, the NNSA has concluded that the potential project effects do not require preparation of a project-specific EIS.

When considering the issue of preparing a programmatic NEPA analysis, a Federal agency must determine whether the program in question meets the Council on Environmental Quality (CEQ's) NEPA Implementing Regulations (40 CFR 1508.18(b)(3)) definition of a major federal action, which includes the: "Adoption of programs, such as a group of concerted actions to implement a specific policy or plan; systematic and connected agency decisions allocating agency resources to implement a specific statutory program or executive directive." These regulations also address when an agency must prepare a programmatic analysis, including the analysis of cumulative effects. A programmatic analysis is necessary where the proposals for federal action "are related to each other closely enough to be, in effect, a single course of action." Additionally, the CEQ regulations speak to the scope of NEPA EISs (40 CFR 1508.25(a)(1)) and to connected actions such as those that "automatically trigger other actions which may require EISs"; "cannot or will not proceed unless other actions are taken previously or simultaneously"; or "are interdependent parts of a larger action and depend on the larger action for their jurisdiction". DOE and NNSA conduct biological research at various facilities across the DOE complex of national security laboratories and other research institutions. This research began in the late 1940s when the DOE's predecessor agency recognized the need for obtaining information about the effects of radiation on humans and other biota. As an outgrowth of this research, many individual studies and research projects have been conducted over the years both for the benefit of DOE (and its predecessor agencies) and as "work-for-others" projects with sponsors from the private sector and other Federal agencies. Each of DOE's facilities has developed specialized areas of focus and expertise and on some occasions have contributed their expertise to performing portions of work that has been pulled together to answer complex questions or reach complex goals, such as work performed recently to map the human genome. At this time, the NNSA believes that these research efforts consist of projects too diverse and discrete to constitute either a "major Federal action" or activities sufficiently "systematic and connected" so as to require a programmatic NEPA analysis, especially an EIS. Not only are the research projects diverse, they are discrete and independent in nature. They are separately operated and approval of one project does not insure the approval of other similar projects. Success in one project area does not invariably affect the variety or direction of NNSA's research, in as much as NNSA's research program is largely reactive, designed to respond to the needs of NNSA, DOE, and other user groups and consumers. While DOE responded to the 1996 Congressional passage of the Defense Against Weapons of Mass Destruction Act, which authorized the DOE to establish a Chemical and Biological Weapons Nonproliferation Program (now known as the Chemical and Biological National Security Program), its research has continued to build upon existing research expertise present at its various research institutes. DOE and NNSA have not expanded their research such that their projects are concerted or systematic and connected. Mere commonality of objectives is

insufficient under the CEQ's NEPA Implementing Regulations to constitute a "major Federal action" requiring NEPA compliance in the form of a programmatic NEPA analysis. While NNSA's biological research projects all pertain to biota and are ultimately directed toward the support of NNSA's national security mission, these rudimentary similarities are not sufficient to bind the universe of research projects conducted by DOE and NNSA into a "program" as this is identified by the CEQ's NEPA Implementing Regulations (40 CFR 1508.18(b)(3)). NNSA is therefore of the opinion that no programmatic NEPA analysis is necessary at this time for biological research conducted at its facilities and this EA is sufficient to meet NNSA's NEPA compliance requirements with regard to the construction and operation of the proposed BSL-3 facility at LLNL.

2. SAFETY OF LABORATORY OPERATIONS

Several commentors expressed the general opinion that LLNL has a history of leaks, spills, fires, explosions and accidents. They indicated that this information concerning operational history is relevant but is not included in the draft EA on DOE's response to build and operate a BSL-3 facility. Commentors also stated that the CDC is more qualified than LLNL and they should be handling the BSL-3 research. Commentors expressed the opinion that issues of safety of lab operations are especially important in light of the February 2001 DOE Office of Inspector General (IG) report entitled "Inspection of Department of Energy Activities Involving Biological Select Agents." Some commentors also felt that it is "a huge leap between BSL-2 and 3 facilities" and that "safety measures and procedures… are vastly different, as are the risks." Another commentor stated in reference to the IBC that "there is no indication whether there will be a process to guarantee full public scrutiny of committee deliberations."

Response
Since it was founded in 1952, LLNL has been managed by the University of California. While mistakes, accidents, leaks, and spills will inevitably occur, LLNL is committed to providing employees and the community with a safe and healthy environment. LLNL has had an infrequent history of incidents and none has resulted in a significant impact to the public or the environment. In 2000, DOE's Integrated Safety Management System (ISMS) was implemented at LLNL, resulting in better safety practices and greater safety awareness. A DOE Verification Team inspected safety procedures at 25 facilities across the Laboratory, reviewed over 700 supporting documents, and determined that LLNL effectively implemented ISMS. The response to comment 11 (Waste Disposal) below discusses LLNL's compliance with permit limits for discharges into the sanitary sewer (between 99 and 100 percent compliance from 1996 to 2000) and LLNL's record of inspections for compliance with the California Medical Waste Management Act. As discussed in Section 4.1.2 of the Draft EA, LLNL has operated BSL-1- and BSL-2-equivalent laboratories for the last 20 years without any infections associated with their operations and no unintentional releases to the environment or to the public.

The CDC, which is part of the Department of Health and Human Services, provides guidelines for the operation of BSL-3 facilities, registers facilities that will access, use and transfer select agents, and then periodically inspects these facilities during operation. The CDC through the Antiterrorism and Effective Death Penalty Act of 1966 (See Appendix A-2) controls the transfer and receipt of select agents. As described in Appendix A-1, each successive CDC-defined

biosafety level builds upon the previous level practices, safety equipment (primary barriers), and facility requirements (secondary barriers). These practices go, for example, from limited access to controlled access, decontamination of only "needed waste" to all waste, and defining medical surveillance requirements to requiring specific baseline serum. Safety equipment requirements for BSL-2 and BSL-3 laboratories are the same, except that in a BSL-2 facility the biosafety cabinets (BSC) are required only for manipulations of agents that cause splashes or aerosols of infectious materials. In a BSL-3 facility all open manipulations are conducted in a BSC. BSL-3 laboratories within facilities need physical separation of areas, self-closing double-door access, and controls on ventilation systems that do not permit air recirculation and have negative airflow into BSL-3 laboratories. BSL-2 laboratories do not have these requirements. Therefore, the engineering controls built into a BSL-3 facility are significant, but there is not a huge technological difference between a BSL-2 facility and a BSL-3 facility. LLNL institutionally uses the same types of facility controls in its other facilities.

CDC laboratories perform work that is different from the research work performed at LLNL. The CDC contracts with DOE and NNSA facilities, as well as with other government and private facilities (due to their capabilities), to perform much of its needed research work, rather than duplicating the research expertise of these agencies within the Department of Health and Human Services. While it is the opinion of some commentors that only the CDC should perform this work, this is neither cost effective nor practical. (Safety measures are discussed further under the response to comment topic 5).

The IG report cited by the commentors (DOE/IG-0492 dated February 2001) states at the beginning of the Observations and Conclusions Section: "We found no evidence that the Department's current biological select agent activities have adversely impacted the safety and health of DOE and contractor employees or the public". The IG observed that the Department had not developed and implemented policies and procedures that establish clear roles and responsibilities for the conduct of activities involving biological select agents and select agent materials. Additionally, the IG stated their opinion that the Department had not ensured that DOE laboratories, including those managed by the NNSA, follow "best practices" for the operation of these facilities. The concluding section of the IG Report, "Inspector Comments", contains the statement: "We believe the corrective actions identified by the Department are responsive to our recommendations." By the date of issuance of the IG report in February 2001, the DOE had already corrected identified problems associated with its management of facilities at which biological select agent work is conducted. At the time of the IG inspection, LLNL had already incorporated the provisions of the CDC/NIH Guidelines into its work standards for operation of its BSL-2-level facilities and was compliant with its provisions. The IG report had no adverse findings with regard to LLNL activities involving operation with biological select agents. DOEs operating contract with the University of California (UC) also requires that LLNL implement the CDC/NIH Guidelines through their Work Smart Standards and their ES&H Manual.

The currently established Institutional Biosafety Committee (IBC) will have authority over approving projects conducted at the proposed BSL-3 facility at LLNL, as it does for current BSL-1 and BSL-2 operations at LLNL. (The role of the IBC is discussed further under the response to comment topic 4 below.) NNSA will maintain strict adherence to the CDC and NIH guidelines

for operating a facility of this nature. DOE oversight actions would also continue to be responsive to the recommendations made by the IG report.

(Additional responses related to safety are discussed under comment topic 5 and security measures are addressed in comment topic 7 below.)

3. DEFENSIVE- VS. OFFENSIVE-ORIENTED RESEARCH

Several commentors expressed their concerns about siting a BSL-3 facility at a nuclear weapons design lab. The commentors questioned how the DOE would prove that this new work with bio-agents is defensive and would not be used in the future for the manufacture of biological weaponry. The commentors expressed their opinions that the proposed culture of some organisms (*Brucella spp., Coccidiodes immitis*) suggests the potential development of agents that could aid U.S. offensive military operations. Commentors also expressed concerns about collocating a BSL-3 facility close to the existing LLNL Environmental Microbial Biotechnology Facility (EMBF), suggesting that it implied existence of future operation of an offensive biological weapons program at LLNL. The commentors were of the opinion that, since the EMBF is a biological fermentor with a capacity in excess of 1500 liters, the facility could be used for industrial-scale production of biological select agents with weapons applications. Commentors cited the proposed production of up to one liter of biological agent at the BSL-3 facility as excessive for defensive research purposes, suggesting that gram or sub-gram quantities of any agent are sufficient for such research. The proposed rodent aerosol challenge tests prompted commentors to infer that this would necessitate weaponization of agents and could pose increased dangers to workers and the public. It was the commentors' opinion that the Draft EA failed to address the risks posed by the aerosolizing, or as the commentor alleges: "weaponization." Another commentor stated that the proposed facility is not a small facility based upon CDC definitions (42CFR72.6(j)). One commentor expressed the opinion that, in addition to a Programmatic NEPA review of DOE's biological warfare defense research, a Nonproliferation Impact review should be conducted.

Response
NNSA acknowledges that many people are opposed to the research, development, and testing of nuclear weapons, weapons research, and testing using live microorganisms. However, Congress directs DOE and NNSA with regards to the missions, and work performed at their facilities must support congressionally mandated missions. Similarly, the Department of Defense (DoD) must respond to its Congressionally assigned missions. Departmental mission support activities have necessitated biological research projects in the past, and this requirement will likely continue into the future for elements of both departments. As discussed in the response to comment topic 1 above, defensive biological research is ongoing at LLNL, is performed in support of DOE and NNSA mission requirements, and would not be inconsistent with existing DOE mission work.

NNSA also acknowledges that certain individuals might see the proposed BSL-3 facility as adding to the perception that the U.S. plans to prepare bioweapons for development of an offensive capability. However, the U.S. is a signatory to the Biological and Toxins Weapons Convention Treaty and has agreed that this nation shall not perform the actual development and production of bioweapons. Additionally, all such U.S. offensive capabilities were destroyed and

offensive-oriented research was halted after the 1969 Presidential decision. Nonetheless, if the U.S. were indeed now planning a major departure in its 33-year-old policy on offensive capabilities, such work would require a facility with different functional capability and of a larger size than the proposed three-laboratory room BSL-3 facility. The microbiological research sample preparation equipment being proposed for the LLNL BSL-3 laboratory would not be the correct type needed to support a bioweapons production facility. Unlike the proposed BSL-3 facility at LLNL, a bioweapons production laboratory would require much more floor space to accommodate a sizeable worker staff and multiple pieces of specialized equipment. DOE does not now, and does not propose to, conduct research or engage in preparation or production of biological materials or toxins for potentially offensive use or purposes at LLNL and it would not be allowed under the Biological Weapons Convention.

It is true that a number of organisms that could potentially be used in research at the proposed BSL-3 facility, including the organisms mentioned by the commentor, could have offensive uses. But research currently being conducted by LLNL and proposed research in a BSL-3 facility would be for defensive purposes. For example, work conducted at LLNL by the Biology and Biotechnology Research Program (BBRP) in 2001 was focused on two areas: advanced detection systems to provide early warning of an attack; to identify the populations at risk, contaminated areas, and facilitate prompt treatment; and to develop DNA signatures and biological forensics technologies to identify the agent, its geographical origin, and/or the initial source of infection. The proposed BSL-3 facility is limited to quantities less than 10 liters (working with over10 liters of culture quantities defines the NIH threshold for a "large-scale research or production" facility). The proposed BSL-3 facility and its operation would be limited to less than 1 liter of cultured microorganisms as the maximum quantity handled in any BSL-3 laboratory room at any point in time. Some research that the proposed facility would conduct requires growth media of up to "liter-size" quantities in order to have sufficient material from which to extract enough genetic material to conduct certain types of genetic research such as that involving messenger RNA. Additionally, organisms such as Coccidiodes immitis, already being investigated by LLNL, are locally important (Valley fever or San Joaquin fever) and research on this is public health related and extremely important to California and the nation at large. DOE believes that work conducted in the facility will not lead to proliferation of offensive biological weapons capabilities and that the EA makes it clear that the proposed facility is not designed as a production facility for offensive research or weapons production. With regard to the additional need for a "Nonproliferation Impact Review" the NNSA is of the opinion that none is required. While NNSA will ensure that the proposed facility would comply with the BWC there is no formal process requiring a "Nonproliferation Impact Review" per se and therefore none would be implemented by the NNSA.

There is no affiliation between the EMBF's 1500-liter fermentor and the proposed BSL-3 facility. The EMBF was established for the investigation, development, and growth of microorganisms that have environmental remediation applications. The facility can also be used for other biotechnological studies, such as the production of microbial pharmaceuticals and food additives. However, the facility is not suited for activities involving pathogenic organisms. BSL-3 facility protocols and engineering and design requirements in conformance with CDC guidance are quite stringent (CDC Biosafety Level Criteria are included in Appendix A-1 to this EA). The EMBF is <u>not designed</u> to meet these BSL-3 criteria, is not being proposed for

operation at the BSL-3 level, and would not be easy to retrofit to meet these criteria. Also, as noted earlier, all biological work conducted at LLNL must be reviewed by the Laboratory Biosafety Operations Committee (LBOC) and, when involving pathogenic organisms specifically, reviewed and approved by the IBC. Work that is not in conformance with federal regulations, CDC/NIH Guidelines, DOE Orders, and LLNL directives cannot be performed because it would not be approved by the IBC and would not be in conformance with provisions of the U.C. contract with DOE.

The term "weaponization" in reference to biological agents can be broadly defined as "the design, and production and storage in large quantity, of biological agents and their delivery systems for military purposes." This is not being done at LLNL, and is not a part of a DOE proposal. Aerosol challenges do not imply "weaponization". An aerosol challenge is the method used to test a rodent by inhalation. The route of pathogen exposure affects the timing for onset of symptoms and it is the inhalation pathway that is one of the quickest. Aerosol challenge allows for testing of detection assays, treatment regimens, and medical intervention approaches as a consequence of inhalation exposures to pathogens. Nebulizers used for challenging test animals are frequently employed in private industry, including in the research and development of cosmetic products. The research proposed for the BSL-3 facility would involve growing and culturing agents, and in some cases challenging rodents by means of administering agents with a nebulizer. Again, no technology is being proposed, developed, or adapted at LLNL for the purpose of "weaponizing" agents.

4. COMPLIANCE WITH BIOLOGICAL WEAPONS CONVENTION

A commentor expressed concern that the proposed work would undermine the Biological Weapons Convention and be viewed with suspicion by the world community. Additionally, the commentor remarked that the draft EA gives no indication of how BWC compliance would be instituted. Several commentors were of the opinion that the draft EA does not provide a process to guarantee public scrutiny of the LLNL biosafety committee deliberations and decision making.

Response
U.S. participation in the Biological Weapons Convention is discussed under topic 3 above.

The proposed BSL-3 facility would be operated according to all guidance and requirements established by such agencies as the CDC, NIH, USDA, DOE and LLNL. Specific guidance references are detailed in Section 2.1.2 of this EA. NIH guidelines require that an IBC be appointed by an institution to provide local and institutional oversight and approval of potentially hazardous lines of biological research (NIH 2001). Section IV-B-2 of the NIH guidelines establishes procedures that the IBC shall follow in its role of review and approval responsibility. These guidelines include review and approval of applications, proposals, and activities; and making available to the public, upon request, all IBC meeting minutes and any documents submitted to or received from funding agencies that those agencies must make available to the public. As detailed in this EA and in the NIH guidelines, at least two members of the IBC are not affiliated with LLNL and they represent the interest of the surrounding community with respect to health and protection of the environment. These IBC members may

be officials of state or local public health or environmental protection agencies, members of other local governmental bodies, or persons active in medical, occupational health, or environmental concerns of the community. Since the IBC is ultimately responsible for ensuring that research conducted at, or sponsored by, LLNL is in compliance with applicable guidelines or regulations, this ensures that the public will be involved in approval of BSL-3 research and review of safety and compliance protocol as it does now for certain BSL-2-level projects. It is possible that some specific project information will be subject to DOE security and classification restrictions, and will consequently not be made available to the public. All proposed microbiological research projects at LLNL, even projects with classified portions, will undergo review and approval by the IBC.

The IBC was established at LLNL in 1991 to ensure compliance with recognized guidelines and regulations concerning research with recombinant DNA or human, animal, and plant pathogens. In 1998, the IBC registered LLNL under the Laboratory Registration and Select Agent Transfer Program of CDC. As currently practiced at LLNL, the IBC must approve all research in the cited subject areas prior to commencement.

5. PUBLIC HEALTH AND SAFETY, AND WORKER SAFETY ISSUES

Comments regarding the issue of public health and safety ranged from general opposition to a BSL-3 facility at LLNL to specific concerns about the potential for accidents and the implementation of procedural safeguards. One commentor remarked that there was no evidence that LLNL conducted a preliminary hazards analysis for the proposed facility and another commentor stated that it was inappropriate to allow biological warfare agent research so close to a major population center. Commentors also expressed the opinion that anticipated work with genetically modified organisms would pose unique or unknown risks to the general public, emergency personnel, and regional medical workers. Commentors expressed concern about how LLNL would respond in the event of an accident at the BSL-3 and how the lab would notify the public and provide information on emergency response actions during an accident.

One commentor remarked that the Draft EA failed to address the effect that a release or exposure could have on the way a region functions. The commentor cited the anthrax attacks of 2001 as an example of the difficulties of determining the nature and extent of a hazard and the potential for entire facilities to close down, despite a relatively small number of casualties. One commentor stated an opinion that the immunization status of laboratory workers represents critical information that should be available to all employees of LLNL and residents of the area.

Response
A Preliminary Authorization Basis Document (analogous to a preliminary hazard analysis) would be completed and approved by NNSA prior to the facility being constructed. A Final Authorization Basis Document (analogous to a final hazard analysis) will be completed and approved by NNSA prior to the facility becoming operational. As for emergency response, the scope and extent of emergency planning and preparedness at LLNL are based on, and commensurate with, the hazards and potential consequences associated with a facility and its operation. The Laboratory uses an emergency management system (known as the Incident Command System) that is capable of responding to and mitigating the consequences resulting

from operational emergencies. Under this system LLNL coordinates with Livermore Police and Fire Departments who in turn notify the public during emergencies. The emergency management system also incorporates provisions and procedures for dialogue with and involvement of local area law enforcement, fire, emergency response agencies if necessary. Emergency response procedures are documented in the LLNL Environment, Safety & Health (ES&H) Manual. The requirements in the ES&H Manual are based on the Work Smart Standards (WSS) identified for the specific work and associated hazards and LLNL best practices that management has determined are requirements. The WSS set was derived from statutes, regulations, DOE Orders, and national and internally developed consensus standards. The ES&H Manual also describes the implementation of the ES&H management commitments made in the Laboratory's Integrated Safety Management System Description. Adherence to the requirements and processes described in the ES&H Manual ensures that safety documents across the Laboratory are developed and updated in a consistent manner.

NNSA is confident that the proposed BSL-3 facility at LLNL can be operated safely and securely.

The day-to-day functions of the proposed BSL-3 facility, and potential increase in the number of biological material shipments to and from the proposed BSL-3 facility do not portend a significant increase in the possibility of human health risks to workers or the public beyond those related to LLNL's current ongoing, routine, BSL-2-level activities.

The safe operation of over 250 BSL-3 facilities within the U.S. substantiates the analysis presented in this EA with regards to this issue. There are on the order of 40 BSL-3 facilities currently operating under the control of the University of California. Several of these are nearby at the UC San Francisco and UC Davis campuses. Representatives of the CDC are authorized to periodically inspect all BSL-3 facilities. When operational, CDC and NNSA would regularly inspect the BSL-3 facility at LLNL.

In reference to the immunization status of workers at LLNL, the information would be made available to proper authorities, such as the CDC. The immunization status of individual workers is part of their personal medical records and, as such, cannot be released to the general public. However, to reiterate from the EA (Section 2.1.2, Operations, pg 18), "Workers would be offered appropriate immunizations for the microorganisms being handled." Information about what immunizations are being offered to BSL-3 laboratory workers would be available from the regular meeting minute records of the IBC, as that pertains to controlling risk associated with proposed research. In the event of unusual epidemiological occurrences involving communicable diseases, information about the medical condition of affected workers would be made readily available to CDC and other authorized public health officials.

6. ACCIDENT ANALYSIS

Several commentors expressed the opinion that the Draft EA lacks a comprehensive analysis of earthquakes, and should address local and regional fault zones. Commentors called for a more thorough analysis of release possibilities and outcomes from seismic risks, as well as other natural disasters. One commentor expressed concern about the vulnerability of a prefabricated building versus that of a conventionally constructed building.

Several commentors pointed out that a 50-mile radius around LLNL embraces more than 7 million people as opposed to the 1.3 million stated in the Draft EA. Given the density and proximity of nearby populations, the commentors were of the opinion that the Draft EA lacked appropriate modeling for accidental releases. Commentors questioned the appropriateness of using accident scenario data related to operation of the U.S. Army Biological Defense Research Program (BDPR) or that of the existing BSL-2 labs operated by LLNL. The commentors stated that the U.S. Army has a long history of operating a BSL-3 facility, and neither DOE nor LLNL has comparable experience.

Commentors expressed the opinion that the Draft EA understated the potential risks of worker exposure, as well as subsequent potential risks of off-site transmission of diseases. Further, several commentors remarked that the process of aerosolizing agents could substantially increase the risk of release and exposure, especially in light of the quantity (up to one liter) of medium containing pathogens that would be permitted. Commentors were of the opinion that the Draft EA does not address the potential for failure of filter systems and called for a more complete analysis of the potential for HEPA filter failure. These commentors alleged that DOE has a poor record of maintenance with regard to operating HEPA filters in some of its nuclear facilities. Further, the commentors state that the Draft EA makes claims for the protective qualities of HEPA filters that exceed the documented record, citing DOE reports that the efficiency of HEPA filters for capture of particles in the 0.1 micron size range is less than the efficiency for the 0.3 micron-sized particles discussed in the Draft EA.

Response

The BSL-3 facility would incorporate design considerations for the occurrence of natural phenomena as appropriate for the LLNL site. The facility would be designed to the latest Performance Category 2 (PC-2) requirements of DOE Standard 1020-2002. Specifically, the seismic design would conform to the 2000 International Building Code, Seismic Use Group III, Criteria 2/3, MCE Ground Motion with an Importance Factor of 1.5. It would be operated under the requirements of LLNL ES&H Manual, Volume II, Part 10, Supplement 27.02, Earthquakes. According to Supplement 27.02, all structures over 5 feet in height must be seismically secured. Furthermore, incompatible materials must be segregated to mitigate spills that could cause chemical or biological releases, as well as fires or explosions due to chemical incompatibility.

In order to obtain a significant margin of safety a peak wind gust of 91 mph would be used as the design wind load, although it is an extremely unlikely event. Flooding is not a design consideration at the LLNL site, per the DOE's Final Environmental Impact Statement and Environmental Impact Report for the Continued Operation of Lawrence Livermore National Laboratory and Sandia National Laboratories, Livermore [DOE, 1992]. Prefabricated modular units, if used for the proposed BSL-3 facility, would be required to be constructed to standards equal to those for a permanent on-site constructed facility, including earthquake and ground motion standards.

The 2000 U.S. Census reports that Alameda County has a population of approximately 1.4 million people (Health Resources and Human Services [HRSA] 2000). The 2000 LLNL Environmental Report (LLNL 2001b) states that there are 6.9 million residents within an 80-km

(approximately 50-miles) radius of the LLNL site. The EA will be changed to add the population of the 50-mile radius from LLNL.

The U.S. Army has been doing biological defense work for years, operating under the same safety protocol and CDC and NIH-developed guidelines as would be applicable at the proposed LLNL BSL-3 facility. This EA describes the Army's extensive experience working with hazardous infectious organisms and references their outstanding safety record to provide a perspective on the adequacy of following these guidelines in the safe operation of its facilities. The DOE has also been involved in biological defense research at LLNL and other facilities for years and has extensive BSL-2 facility experience. The BLS-2 laboratory staff at these facilities have safely handled many of the same agents that are proposed for handling in BSL-3 facilities. Highly trained individuals would operate the laboratory with modern equipment and in accordance with established nationally recognized guidelines and comprehensive oversight. Since 2000, LLNL researchers have safely worked with a number of strains of anthrax and plague at the BSL-2 level. The work has been conducted safely and in full compliance with all applicable security, health, and other administrative requirements and guidelines. NNSA is confident that DOE and LLNL have comprehensive and appropriate experience and trained personnel to safely operate the BSL-3 facility, and that potential risks to workers and non-workers have been adequately addressed in this EA.

The accident analysis scenario presented in the EA addresses the potential effects associated with an accident in which potential highly infectious cells would be disbursed into the environment from the proposed facility during its operation. Analysis of historical data related to the operation of other similar federal and industrial facilities shows that a significant release beyond the facility building is extremely unlikely to occur. The only releases that are probable would be contained within the building, which is a facility specifically designed for decontamination. Any accidental releases, if they occurred, would impact only a small area of the lab, which could easily be decontaminated. The likelihood of a wide area, city or population, effect should be considered improbable. The nature of the agents, dose/response potential, dispersion, the limited quantities involved, and the design of the building and safety protocols preclude a large-scale or widespread release potential. As described in the Draft EA, human pathogens for which there is no immunization or medical treatment available would not be handled in the proposed BSL-3 laboratory, in accordance with Biosafety in Microbiological and Biomedical Laboratories (BMBL) guidelines.

In June 1999, LLNL imposed lifespan limits on HEPA filters, found in UCRL-AR-133354 Rev 1, "HEPA Filter and In-place Leak Testing Standard", of 10 years from date of manufacture if the filter is in a dry location or five years from date of manufacture or testing if it is where the filter could become wet, such as during a fire suppression system discharge. The HEPA filter installation proposed for the LLNL BSL-3 facility would be in accordance with accepted good practice for biological safety as specified in the nationally accepted criteria for biological safety, the Centers for Disease Control and Prevention/National Institutes of Health, Biosafety in Microbiological and Biomedical Laboratories (CDC 1999). Testing of HEPA filters in biological safety cabinets is part of the BSC certification and would be done in accordance with the National Sanitation Foundation (NSF International) Standard 49 as noted by the CDC (CDC

2000b). Performance testing of the HEPA filters would be conducted by NSF-accredited field certifiers.

NNSA acknowledged in the LLNL Supplement Analysis for Continued Operation of Lawrence Livermore National Laboratory and Sandia National Laboratories, Livermore (March 1999, DOE/EIS-0157-SA-01) the issue of reduced removal efficiency of HEPA filters for particles in the size range from 0.1 micron to 0.3 microns. The study which provided this information was from a dissertation written by Ronald C. Scripsick (Los Alamos National Laboratory Report, LA-12797-T, 1994). Even though the most penetrating particle size in his study was slightly smaller than the HEPA filter "most penetrating design point" of 0.3 microns, his results still showed a 99.97% removal efficiency or higher in the range from 0.148 to 0.196 microns. These removal efficiencies are higher than the removal efficiencies used for the accident scenario in this EA and therefore the scenario conclusions are unaffected by recognizing a smaller most penetrating particle size.

7. THREAT OF TERRORIST ATTACK/SABOTAGE

Commentors expressed a general opinion that the Draft EA does not adequately address external or internal security issues, citing that no security analysis is included in the document. Concerns included the potential for unauthorized access, the potential for removal of biological agents by a BSL-3 worker or other person, and the potential for a deliberate release of biological agents and subsequent risk to the surrounding community.

Commentors stated that the Draft EA does not address the possibility of terrorist attack, and in light of the September 11, 2001 events and anthrax mailings, consideration of terrorism and internal threats must be included in the NEPA analysis for the BSL-3 facility. One commentor stated an opinion that LLNL already represents a terrorist target and the addition of a BSL-3 facility, which the world may believe is for offensive research purposes, will exacerbate the threat of terrorism.

Response
As stated in the EA, physical security and safeguards would be based upon a security analysis conducted during the appropriate project planning stage. As in all facilities managed at LLNL, access is limited to only authorized DOE-badged personnel or under DOE-approved escort procedures. Safeguards would also be consistent with CDC/NIH guidelines. It would be imprudent to describe the specific security protocols in a public NEPA document as the commentor suggests. This is due in part to the relative high-security of the overall LLNL operations, and also to the limited and synoptic availability of significant quantities of viable pathogens due to the facility being focused on genetic research (on the parts of the microorganisms). Added to this is the extremely limited potential for a release of microorganisms from the multiple levels of bio-containment within the building. The level of security at LLNL and the uncertainty of available and viable microorganisms would preclude it from being a desirable or likely target for removal or theft of biological agents.

There are at least two reasons why the potential results of terrorist attacks are not currently included in NEPA analyses, nor are they anticipated for inclusion in detail in these analytical

documents in the near future. The first reason is that NEPA accident risk analysis is done for "reasonably foreseeable" accident events. While terrorist events are possible, these are not reasonably foreseeable accident events in the sense that a probability of occurrence could be determined for a NEPA analysis. This is not to say that NNSA would not evaluate possible terrorist actions and work to mitigate them. On the contrary, NNSA continuously strives to assess and remove potential threat opportunities. Secondly, regardless of the initiating event (whether naturally occurring, human-error, or malicious intent), the NEPA accident analysis scenario presented in this EA in which the rickettsia microorganism, C. burnetii, is accidentally released into the environment from the proposed facility is bounding in.

Terrorist attacks come under the realm of security and therefore are appropriately evaluated in a separate risk assessment. That risk assessment would determine what security measures would be taken to protect the facility. This assessment document and its details are not available for public review since this would defeat the purpose by making all security measures public knowledge. Terrorists could then use this information to better plan for future attacks—something that no one wishes to facilitate.

8. TRANSPORTATION SAFETY

One commentor expressed concern about the safety of biological material shipments, especially traveling through the USPS, to and from the facility. The commentor stated that the EA does not adequately analyze the possibility of a shipment of pathogens being intercepted.

Response

The volume of shipments of microorganisms into the proposed BSL-3 facility would increase when the facility first begins its operation, then would taper off to levels that are only marginally higher than are experienced today in support of existing and ongoing LLNL bioscience and health technology research. Shipments out of the facility would also represent only a slight increase over existing levels of biological shipments. Both incoming and outgoing shipments are typically of milliliter- or micro liter-size samples packaged inside several layers of containment, per Department of Transportation (DOT) shipping requirements. The packaged samples are shipped via federal and commercial or private couriers and are tracked in accordance with nationally-accepted DOT and CDC requirements. Any increase in incidence of shipping accidents due to the incremental increase in the number of shipments to and from LLNL as a result of implementing the proposed BSL-3 facility would be negligible given the volume of mail and packages transported by these transport services. Similarly, any increase in vulnerability of biological agent shipments to terrorist seizure resulting from the incremental increase in shipments to or from LLNL would be negligible given the volume of mail and packages transported by these national-scale operations.

The EA notes that the shipment of samples to and from LLNL would involve materials packaged in accordance with DOT standards. The packaging required by DOT has already undergone extensive drop, crush, and other accident-condition testing, before DOT determined the safe and appropriate transport and packaging requirements for these types of samples. Using DOT standards for packaging and/or using couriers that transport the shipments according to DOT requirements does not result in an obligation by DOE to perform a unique NEPA review for

transport of its materials through common carriers. Transportation of microbiological samples to and from various points around the country and around the world, when performed according to DOT standards for packaging and shipment, should result in no human health or environmental effects to the carriers themselves or to the public along the routes. Federal and commercial carriers have been transporting appropriately packaged biological samples for many years both before, during, and after the recent anthrax-contaminated letters were mailed. Hospitals, laboratories, schools, universities, and teaching facilities engage in the transport of biological samples in large numbers every day. Any increase in the risk of accident or terrorist attack because of shipments associated with the proposed BSL-3 facility at LLNL would be negligible.

9. PURPOSE AND NEED

A commentor expressed the opinion that the proposed action is not sufficiently justified in the "purpose and need" secton of the Draft EA. The commentor suggested that the DOE should look comprehensively at existing BSL-3 facilities and capabilities, so as not to duplicate capabilities by constructing a BSL-3 facility at LLNL. For example, the commentor questioned why the Draft EA did not discuss in more detail the option to conduct all the necessary BSL-3-level work at a BSL-3 facility currently used by LLNL (such as the CDC facility in Fort Collins) for its current projects. Additionally, commentors were of the opinion that the DOE is required to analyze whether the proposed Los Alamos National Laboratory (LANL) BSL-3 facility would provide an alternative to construction of the proposed facility at LLNL. Commentors questioned why it is necessary to have two BSL-3 facilities under the jurisdiction of the DOE, when BSL-3-level research could be done at one facility.

Response
LLNL conducts its own specific research, including understanding genetic and biochemical causes of disease, projects for countering biological terrorism, bioengineering research, and developing and applying computational biology capabilities. Many of these are unique to LLNL. Currently, DOE and NNSA research projects requiring BSL-3 sample preparation are contracted to universities or private sector laboratories. This procedure has increasingly become difficult and represents a barrier to continued efficient research for several reasons. Government and private sector projects requiring BSL-3-level facilities are on the rise, resulting in the existing laboratories being unable to accept as much outside work such as that represented by NNSA's/DOE's projects. Information security also needs to be carefully considered, since information associated with some samples requires a very high degree of physical security, which is not uniformly available through the use of contractor facilities. Additionally, scheduling difficulties at contract laboratories could seriously limit or compromise timely research projects. Quality assurance documentation, including chain of custody issues related to federal projects, are also essential to verifying data and interpreting results. It is critical to the research being conducted that the quality and security of samples not be compromised. If the DOE hopes to further the Nation's ability to detect and isolate microorganisms and treat victims of bioterrorism, enhanced capabilities are necessary at the location-centers for such research. For the reasons described above, the integrity of the research dictates that the BSL-3 facilities be under the direction of DOE, and the individual

National Laboratory. It is not possible to continue conduct of all the BSL-3-level research in a timely, efficient, cost-effective, or security-controlled manner at another laboratory.

Although construction of the LANL BSL-3 facility recently began, it is not operational and won't be until it has met all readiness requirements. In addition, the research currently conducted at LLNL is different from that at LANL, and it is likely that each facility will continue to have separate areas of expertise. LLNL and LANL staff members would continue to collaborate on technical matters relating to their separate research and development efforts, as they have been doing in the past. For these reasons, DOE and NNSA believe that it is not duplicative to have two BSL-3 facilities under the jurisdiction of the DOE.

10. Adequacy of Alternatives Analysis

A commentor expressed the opinion that the discussion of alternatives in the Draft EA is deficient, stressing that a careful analysis of alternatives is essential due to the risks of placing such a laboratory in a densely populated urban area. According to the commentor, the EA addresses only various ways to construct a BSL-3 facility at LLNL but does not compare other possibilities for accomplishing the mission, such as using other existing facilities, using government facilities to be constructed in the near future, or constructing a BSL-3 facility at another DOE site.

Response
The Draft EA presents a discussion of three different alternatives for construction and operation of a BSL-3 Facility at another National Security Laboratory or at the other locations at the Livermore Site or at Site 300 (Sections 2.5 through 2.5.3). The discussion of these alternative indicates that they do not meet the NNSA's purpose and need. Accordingly, these alternatives were not analyzed further in the EA.

The response to topic 5 above reviews the accident scenario and potential for risk to the local community. The response to topic 9 above addresses the need for a BSL-3 facility under the jurisdiction of DOE at LLNL, and discusses why the use of existing facilities located off-site (including potential BSL-3 facilities at other DOE sites) does not meet this need.

11. Waste Disposal

Commentors stated that although the Draft EA indicates that the proposed facility would direct 10,000 gallons of wastewater to the city sewage system, the EA does not adequately describe a monitoring system for the wastewater. Commentors questioned how LLNL would detect a "release" and how it would be prevented from being released into the city sewage treatment. The commentors expressed the opinion that since LLNL has had releases of toxic metals, radionuclides, and hazardous materials, a more thorough analysis of these issues should be undertaken.

One commentor remarked that the Draft EA was not clear on whether liquid waste materials generated from laboratory operations would be discharged directly to the sanitary sewer or first to retention tanks. The commentor points out that page 34 in the Draft EA states that liquid

waste from the proposed facility operations would be discharged to a retention tank system, but page 45 states that there would be no retention tanks. The commentor also noted that discharge of waste from improperly characterized retention tanks to the sewer system has been a problem in the past at LLNL with radioactive and hazardous wastes, and suggested that discharge of toxins or pathogens to the sewer system is a possibility.

Similar comments were also raised concerning solid waste disposal. Commentors raised concerns about which area landfills would be used for non-hazardous solid waste and what analytical methods LLNL would employ to ensure that hazardous and infectious agents are not sent to the landfills.

Response

As described in the LLNL Environmental Report 2000 (LLNL 2001b) made widely available to the public, LLNL achieved greater than 99% compliance with Livermore Water Reclamation Plant (LWRP) permit limits covering discharges into the sanitary sewer during 2000. During 2000, only three notices of violation were written (two for metals and one for cyanide) and no sewer releases exceeded discharge limits for radioactive materials. LLNL achieved between 99 percent and 100 percent compliance with permit discharge limits for 1996 through 2000.

All LLNL medical waste management operations comply with the California Medical Waste Management Act, which establishes a comprehensive program for regulating the management, transport, and treatment of medical wastes that contain substances that may potentially infect humans. In September 2000, an Alameda County Department of Environmental Health (ACDEH) inspection of the Biology and Biotechnology Research Program (BBRP) found no compliance issues or violations (LLNL 2001b). The Annual LLNL Environmental Reports for 1997-1999 state that inspections of LLNL's medical waste generator and treatment facilities also resulted in no compliance issues or violations. In 1996 the Alameda County Environmental Health Services Inspector issued only one report of violation for storage of medical waste (cotton swabs, bandages, and gauze pads) longer than 7days above 0^{o} C. Immediately after the violation was received, a LLNL self-assessment of medical waste compliance was conducted, additional training was provided, and revised medical-waste management procedures were implemented.

Sanitary liquid waste would be generated from the proposed BSL-3 facility from research activities and from toilets, showers, and sinks. Soluble or liquid waste material generated from laboratory operations are expected to be about 3 gallons per week and would be treated with disinfectants prior to disposal in the laboratory sinks. As stated in the EA, no discharge limits currently exist for infectious materials that are commonly discharged by healthcare and veterinary facilities and laboratories or homes. However, liquid waste generated from the proposed BSL-3 operations would be discharged to a retention tank system for characterization and disinfection as needed prior to discharge to the sanitary sewer system. The incorrect statement on page 45 (no retention tanks) of the Draft EA has been removed. Discharge guidelines, monitoring, and applicable regulatory requirements and restrictions are described in Section 3.3.5 of the EA.

As described in Section 2.1.2 of the EA, all waste generated in the laboratories of the BSL-3 facility (including sample packaging, culture materials, petri dishes, personal protective equipment, and associated process wastes) would leave the laboratories only after decontamination in the autoclave and/or after being chemically sterilized. Waste sterilization and quality assurance procedures for the autoclave are detailed in the EA. Live pathogen agents are not sent to landfills. No toxic metals, hazardous wastes, radiological waste, or hazardous chemical waste would be generated by the facility. Solid waste generated from the proposed facility would be sent to area landfills in the same manner as other BBRP and LLNL-produced solid waste. Any biological shipments sent from LLNL to other researchers or the CDC are decontaminated prior to shipment, as described in the EA.

12. TIMELINE FOR THE BSL-3 FACILITY

Commentors expressed the opinion that the timeline for construction of the LLNL BSL-3 facility, stated in the Draft EA as "…estimated to start in FY 2002 and take approximately 6 months to complete", indicates that the DOE is not serious about a good-faith NEPA review nor public involvement in decision-making. The commentor states that the 6-month construction period suggests that DOE has already decided to use a prefabricated building and the construction timeframe indicates a foregone conclusion and not a decision that is dependant on the NEPA review process.

Response
The proposed action in the Draft EA (a permanent modular unit constructed off-site and assembled on-site) is clearly described as the preferred alternative. CEQ and DOE NEPA regulations call for an EA to describe the Agency's preferred alternative, but this does not suggest that DOE has chosen this alternative, begun implementation of the alternative, or in any other way predetermined the results of the NEPA review process. The same is true for the projected construction schedule noted in the proposed action in the Draft EA. The dates and completion schedule outlined in the Draft EA were proposed schedules for the preferred alternative provided for illustrative purposes for the preferred alternative. Revised projected schedules for project completion are included in the Final EA.

C.2 Public Comment Letters/Email Messages

Table C-1 lists all the public comments received for this EA. Many were form-type email and letter submissions (identified by an asterisk in the first column on the table). Following the table are the letters and emails submitted. Only one of the form-type emails is shown.

TABLE C-1. LIST OF PUBLIC COMMENT LETTERS/EMAIL MESSAGES RECEIVED

E-mail/ Ltr	Name	E-mail Address	Address
e-mail*	Louise Aldrich & Helen Callbeck	aldrich@igc.org	57 Meadow Dr., San Rafael, CA 94903
e-mail*	Patricia J. Ameno (CASE)	pameno47@aol.com	131 Market St., Leechburg, PA 15656
e-mail*	Keith Bell	keithbell@earthlink.net	2549 S. 371st Pl., Federal Way, WA 98003
letter*	Janis Bettencourt		749 Hazel St., Livermore, CA 94550
e-mail*	Jean Blackwood	greenjean@planet-save.com	6031 CR105, Carthage, MO 64836
e-mail*	Abby Bogomolny	abbyb@earthlink.net	P.O. Box 9636, Oakland, CA 94615
letter*	Phillipe Bourgois		Department of Anthropology, History and Social Medicine, UCSF, Box 0850 Suite 485K, 3333 California St., San Francisco, CA 94143
letter*	Tone' Branchaud		105 Quigg Way, Boulder Creek, CA 95006
letter*	Theresa Bravo		131 Pryce St., Santa Cruz, CA 95060
e-mail*	Tara Carr	taradcarr@hotmail.com	442A Guerrero St., San Francisco, CA 94110
e-mail*	Shamir Chauhan	shamir@got.net	615 Washington St., Santa Cruz, CA 95060
e-mail*	G. Cook	gcook69833@aol.com	P.O. Box 4233, Berkeley, CA 94704
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e-mail*	Michelle Darr	phoenixmoondancer@hotmail.com	4687 Lowell Ave. NE, Keizer, OR 97303
e-mail*	Heather Davison	heather.davison@wslfweb.org	3032 Brook St., Oakland, CA 94611
e-mail	Mike Donly	mtdonly@worldnet@att.net	
e-mail*	Sohrab Dorabji	sohrabd@pacbell.net	P.O. Box 1565, Rocklin, CA 95677
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e-mail*	Michael Eisenscher	getorganized@igc.org	1737 Allston Way, Berkeley, CA 94703
e-mail*	Lynette Eldredge	leldredge@ispwest.com	13929 Quaillan Way, Nevada City, CA 95959
letter*	Jan Filip		First Christian Church of Fremont CA., 35601 Niles Blvd., Fremont, CA 94536
e-mail	Rev. Robert Forsberg	RFORSBERG@aol.com	1280 Laguna St. #10J, San Francisco, CA 94115-4265
e-mail*	Bill Foster	chilliwilly@attbi.com	1219 Kensington Ave., Salt Lake City, UT 84105
e-mail	George Franklin	george@groundworknews.org	San Francisco, CA
letter*	Hans Frisch		852 Sungold Cir., Livermore, CA 94551
letter*	Joann Frisch		852 Sungold Cir., Livermore, CA 94551
e-mail*	Jim Fung	jfung79@uclink4.berkeley.edu	7968 Sunderland Dr., Cupertino, CA 95014
e-mail & letter	Robert Gould (Physicians for Social Responsibility)	rmgould1@yahoo.com	311 Douglas St., San Francisco, CA 94114
e-mail & letter	Edward Hammond - SUNSHINE PROJECT	hammond@sunshine-projects.org	101 W. 6th St. Suite 607, Austin, TX 78701)
e-mail*	David Hartsough	peaceworkers@igc.org	721 Shrader St., San Francisco, CA 94117
letter	Carl & Wendy Hassel		Tracy
e-mail*	Esther Ho	estherho@worldnet.att.net	2144 Thayer Ave., Hayward, CA 94545
e-mail*	Matthew Hogan	mbhogan_0930@hotmail.com	400 Baker St. #103, San Francisco, CA 94117
letter	Jim Horen		Alameda County Flood Control and Water Conservation District, 5997 Parkside Drive, Pleasanton, CA 94598
e-mail*	Matt Howell	mhowell89@aol.com	727 Timberlake Tr., Fort Wayne, IN 46804
e-mail	Marylia Kelley	marylia@earthlink.net	2582 Old First Street, Livermore, CA 94551
e-mail	Marylia Kelley	marylia@earthlink.net	Tri-Valley Cares, 2582 Old First Street, Livermore, CA 94551
e-mail*	Marylia Kelley	marylia@earthlink.net	
e-mail*	Lucy Kenyon	seishin@pon.net	195 Walnut Cir., Rohnert Park, CA 94928
e-mail*	Janie Kesselman	janiekess@hotmail.com	15490 Old Toll Rd., Camptonville, CA 95922-0104
e-mail	Colin King	colinking@nukewatch.org	551 W. Cordova Rd. #808, Santa Fe, NM 87505
letter*	Donald.F. King		1020 Dolares St. #31, Livermore, CA 94550
e-mail*	Karl Kramer	karl@cc-ds.org	2261 Market St. #206, San Francisco, CA 94114
e-mail*	Steve Krevisky	skrevisky@mxcc.commnet.edu	
e-mail	Cliff & Diann Lacroix	lacroixdn@netscape.net	2094 Vintage Lane, Livermore, CA 94550
e-mail*	Jared Laiti	jaredl@sbcglobal.net	2021 Burbank Ave., Santa Rosa, CA 95407
e-mail*	Sherry Larsen-Beville	sbeville@pacbell.net	555 10th Street #113, Oakland, CA 94607
e-mail*	Marvin I. Lewis	marvlewis@juno.com	3133 Fairfield St., Philadelphia, PA 19136

TABLE C-1. LIST OF PUBLIC COMMENT LETTERS/EMAIL MESSAGES RECEIVED

E-mail/ Ltr	Name	E-mail Address	Address
letter	Andrew Lichterman, Western States Legal Foundation		Western States Legal Foundation, 1504 Franklin St. Suite #202, Oakland, CA 94612
letter	Andrew M. Lichterman		1504 Franklin St. Suite #202, Oakland, CA 94612
e-mail*	Eve Lindi	elindl@msn.com	6539 Heather Ridge Way, Oakland, CA 94611
e-mail	Joan & Stuart MacIntyre	jmmmmac@pacbell.net	478 Jean St., Oakland, CA 94610
letter	Matthew G. McKinzie & Geoffrey H. Fettus (NRDC)		1200 New York Ave. NW, Suite 400, Washington, DC 20005
e-mail*	Nancy McLaughlin	nmcl@aol.com	485 Eucalyptus Dr., San Francisco, CA 94117
e-mail*	R. Miles Mendenhall	miles-mendenhall@hotmail.com	1327 Baird Rd., Santa Rosa, CA 95409
e-mail*	John Michael	chefjemichel@yahoo.com	205 Washington St. #17, Grass Valley, CA 95945
e-mail*	Barry Miller	bamiller@igc.org	214 S. 9th St., Olean, NY 14760
letter*	Leroy Moore		3360 14th St., Boulder, CO 80304
letter*	Patricia Moore		23 Diamond Dr., Livermore, CA 94550
e-mail*	John Morearty	morearty@sonnet.com	1205 W. Acacia St., Stockton, CA 95203
e-mail*	Leuren Moret	leurenmoret@yahoo.com	2233 Grant St. Apt. 1, Berkeley, CA 94703
e-mail*	Dale Nesbitt	dnesbitt@idiom.com	1712 Marin Ave., Berkeley, CA 94707
letter	Nuclear Watch of New Mexico		551 W. Cordova Rd. #808, Santa Fe, NM 87505
e-mail*	Jon Oldfather	jolpappy@attbi.com	158 Pine St., San Anselmo, CA 94960
e-mail*	Inga Olson	olsoning@yahoo.com	2582 Old First Street, Livermore, CA 94551
e-mail*	Seth & Lorena Parker	lorena-lucy@yahoo.com	2121 Locust St., Owensboro, KY 42301
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e-mail*	Jennifer Pitino	jp@got.net	4199 Clares St., Capitola, CA 95010
e-mail*	People Power	Peoplepower@aol.com	
letter*	Martha Priebat		3375 Norton Way #2, Pleasanton, CA 94566
e-mail*	A. Radil	aradil@aol.com	
e-mail*	Deborah Reade	reade@nets.com	
letter*	David Rogers		4831 NE 31st Ave., Portland, OR 97211
letter*	Keith Rothenberg		23 Diamond Dr., Livermore, CA 94550
e-mail*	Carolyn Scarr	epicale@earthlink.net	1340 Ada St., Berkeley, CA 94702
e-mail*	Patricia Schnedl	patschnedl@juno.com	4039 Graham St., Pleasanton, CA 94566
e-mail*	Charles Schwartz - Dept. of Physics	schwartz@socrates.berkeley.edu	U.C. Berkeley, CA 94720
letter*	Alexander Seitz		22103 Main St., Hayward, CA 94541
letter*	Ann Seitz		22103 Main St., Hayward, CA 94541
letter*	Robert Seitz		22103 Main St., Hayward, CA 94541
e-mail*	Ashok Sharma	agrostar@sify.com	Sec. 9 #72, RKP New Delhi 110022, India
e-mail*	Mark Stewart	mark@eastmeetswest.org	150 17th Street, Oakland, CA 94612
e-mail*	Stanley Taylor	stanleyt@pacbell.net	421 Sautner Dr., San Jose, CA 95123
e-mail*	Dennis Thomas	dennisthomas@hotmail.com	
letter	Whitney Tiedemann		4057 Tera Alta Dr., San Ramon, CA 94583
letter*	J.B. Turner		749 Hazel St., Livermore, CA 94550
e-mail*	Connie Tyler	connie@deephum.com	2322 8th St., Berkeley, CA 94709
e-mail*	Elisa Welch	elisa@elisawelch.com	196A Precita Ave., San Francisco, CA 94110
e-mail*	Jane Welford	wibberkeley@yahoo.com	2128 B. Woolsey St., Berkeley, CA 94705
e-mail*	Dawn Wilson-Enoch	phosphene1@earthlink.net	1 Sage Hill Dr., Placitas, NM 87043
e-mail*	Dorothy Wonder	dpwonder@juno.com	46 Whitney St., Oakland, CA 94609
e-mail	Robin Wood	robinwood@attbi.com	

* Form-type letter

-----Original Message-----
From: Mike Donly [mailto:mtdonly@worldnet.att.net]
Sent: Sunday, September 01, 2002 1:52 PM
To: rich.mortensen@oak.doe.gov
Subject: draft EA

I don't want my tax dollars used for a BSL-3 facility run by the DOE. Why isn't the CDC handling this research? They appear to be more qualified than the Livermore Lab. Your safety record should eliminate you from the list of potential facilities for this research.

What a sad day it is for this once great country.

Michael Donly

Structural Engineer

-----Original Message-----
From: RFORSBERG@aol.com [mailto:RFORSBERG@aol.com]
Sent: Saturday, September 07, 2002 2:01 PM
To: rich.mortensen@oak.doe.gov
Subject: comment on DOE/EA-1442

Mr. Richard Mortensen
DOE NEPA Document Manager
US DOE, Livermore Site Office, M/S L-293
PO Box 808
Livermore, CA 94551

Dear Mr. Mortensen:

I am writing to comment on the Environmental Assessment (DOE/EA-1442) for the construction and operation of a Biosafety Level 3 (BSL-3) facility at the Department of Energy's (DOE) Lawrence Livermore National Laboratory (LLNL).

A BSL-3 facility would allow LLNL to experiment with a broad spectrum of bio-toxins and biological agents including anthrax, bubonic plague, botulism, small pox and even genetically modified lethal bio-warfare agents. This is a new program that, if inadequately analyzed before proceeding, could endanger workers and the community. Thus, it is important that further environmental review in the form of a project specific Environmental Impact Statement (EIS) be conducted.

The Livermore Lab has a history of leaks, spills, fires, explosions and accidents. In recent years, these have included, but are not limited to, a chlorine gas leak that forced an evacuation, a filter shredding accident that contaminated workers with curium, numerous inadvertent releases to the sanitary sewer and an explosion that sent one employee to the hospital. Radioactive and toxic contaminants have found their way from DOE operations at LLNL into the air, groundwater and soil on-site and off-site, and have jeopardized the health of workers and surrounding communities.

This operational history, which was not included in the draft EA, is relevant to the proposal to site a BSL-3 facility at Livermore; certainly as relevant as the operational history of non-DOE facilities that is outlined in the draft EA. Clearly, a proposal to allow the use of potentially deadly bio-agents and bio-toxins at a facility with such a spotty safety record requires a comprehensive analysis of the risks and thorough environmental review. The EA lacks the level of analysis necessary to inform decision-making.

For 50 years Livermore Lab has been one of the nation's two primary nuclear weapon design labs, along with Los Alamos National Lab, in New Mexico. A BSL-3 facility is also proposed at Los Alamos. Yet, in both EA's, the DOE states that it has no BSL-3 facility, omitting mention that the agency is planning multiple facilities. In fact, DOE is moving forward with an integrated, new program area -- researching bio-warfare agents. It is essential that a Programmatic EIS be prepared to adequately review the programmatic, cumulative and integrated effects of undertaking this new mission area. Further, a full analysis of alternatives, which is central to a PEIS, is absent from the draft EA.

Constructing and operating a BSL-3 facility represents a new direction and program for DOE and LLNL; one that could have serious health and environmental consequences. Therefore, this proposal to create a BSL-3 facility at LLNL merits both a programmatic and project specific EIS. It is in the context of a full environmental review that the specific questions I have raised (and others) could best be answered.

Thank you for the opportunity to comment on the draft Environmental Assessment. Please inform me in writing of any decisions DOE makes regarding the BSL-3 facility at LLNL and its environmental review process.

Sincerely,

Rev. Robert Forsberg
Presbytery of San Francisco
1280 Laguna St. #10J
San Francisco CA 94115-4265

-----Original Message-----
From: George Franklin [mailto:george@groundworknews.org]
Sent: Friday, September 06, 2002 9:22 PM
To: rich.mortensen@oak.doe.gov
Subject: No Bio-warfare at LLNL

Dear Mr. Mortensen,

please do not allow Livermore Laboratory to engage in biological-warfare research. This Lab has a terrible history of heeding the welfare of the surrounding communities, which grow denser every year.

It is entirely inappropriate to allow Livermore Lab to conduct such research in a major population center.

Thank you for your attention to this matter,

George Franklin
San Francisco, CA

311 Douglass Street
San Francisco, CA 94114
September 7, 2002

Mr. Richard Mortensen
DOE NEPA Document Manager
US DOE, Livermore Site Office, M/S L-293
PO Box 808
Livermore, CA 94551

Dear Mr. Mortensen:

I am writing on behalf of the SF-Bay Area Chapter of Physicians for Social Responsibility, representing over 1,500 members throughout the SF-Bay Area, to comment on the Environmental Assessment (DOE/EA-1442)
For the construction and operation of a Biosafety Level 3 (BSL-3) facility At the Department of Energy's (DOE) Lawrence Livermore National Laboratory(LLNL). As an organization dedicated to ending the dangers posed by the proliferation of all weapons of mass destruction, including biological weapons, and to the protection of public health, we have a number of significant concerns about the plans for establishing a BSL-3 facility in LLNL, and about the planned proliferation of similar operations throughout the DOE complex.

Need for Programmatic and Project-Specific EIS

The plans for building and operating a BSL-3 facility at LLNL need to be examined in the context of DOE's overall plans to develop a new integrated program through multiple facilities on researching bio-warfare agents, putatively for defensive purposes. We believe that it is imperative that a Programmatic and Project-Specific EIS be prepared to adequately review the integrated and cumulative effects of undertaking this new mission area, particularly as regards potential weapons proliferation and health risks. In addition, a full analysis of alternatives, which is absent from the draft EA, but central to a PEIS is needed.

Proliferation Issues

PSR is particularly concerned that the planned work involving numerous pathogenic organisms, including genetically-modified varieties, would tend to severely undermine the internationally sanctioned, primary-prevention-based "alternative" to the proliferation of, and dangers posed by biological weapons--the Biological Weapons Convention(BWC). This is especially disturbing given the continued rejection by the U.S. government of global efforts to develop strong inspection and verification protocols for the BWC. Given that DOE encouraged U.S. government leaders to scuttle the draft international agreement of 2001, the fact that high-level research on biological agents will be performed secretly in weapons facilities such as LLNL will likely be viewed with suspicion by the world community, encouraging a global biological weapons race. In this regard, it is instructive to recall the September 2001 *New York Times* reports of U.S. plans to work with genetically-modified anthrax, and of the prototype germ warfare facility developed at the Nevada Test Site, that raised widespread concerns about possible U.S. violations of the BWC.

The draft EA for the LLNL facility raises similar concerns. On page 17 of the main document, it is mentioned that viable organisms expected to be used "would be, but not limited to the select agents *Bacillus anthracis, Yersinia*

pestis, Clostridium botulinum, Coccidiodes immitis, Brucella spp., Franciscella tularensis, and *Rickettsia spp*," and that it "is possible that the facility would receive genetically altered microorganisms." Although the EA states that all work with infectious microorganisms must be in strict accordance with the BWC, there is no detailed indication of how such compliance would be instituted, either at LLNL or DOE-wide.

Given the universally appreciated ambiguity of much "biodefense" work, as regards offensive potential, it is important that the specific nature of any review process regarding these issues be spelled-out, and made completely transparent. Although the draft EA says that a LLNL biosafety committee will review experiments, there is no indication whether there will be a process to guarantee full public scrutiny of committee deliberations.

These issues are particularly important given that the proposed facility, will work with a large number of potential biowarfare agents, while being located close to a large and modern bioreactor facility (EMBF) that reportedly has a capacity in excess of 1,600 liters, as well as equipment that can prepare large amounts of microbes for field release. Given such capabilities, it is hard to distinguish the putative defensive nature of the program from an offensive weapons program able to produce bioweapons in disturbing quantities. These concerns are underscored by the fact that the EA indicates that BW agent cultures may be produced in quantities of up to one liter, that portend considerable doses. For example, if such a volume of Coxiella burnetti were produced at EA-indicated concentrations of 10^8 organisms per ml, it would provide enough organisms to theoretically produce ten billion human infections. Since gram or sub-gram quantities of any agent is considered sufficient for defensive research, it is important to confirm if LLNL indeed plans to produce liter volumes of pathogens, and for what reason.

Of the organisms mentioned in the EA for consideration of being cultured in the near future, some (*Brucella spp.*, *Coccidiodes immitis*) are considered incapacitating, rather than deadly agents, raising additional concerns about the presumed defensive nature of the work, in contrast to the potential development of agents that could aid U.S. offensive military operations.

Public Health Issues

The EA's description of planned aerosol challenge tests on rodents, which will likely necessitate weaponization of agents. Such operations would apparently require specialized equipment and would pose increased dangers from accidents to lab workers and the general public, issues not addressed adequately in the EA. Inadvertent exposure to pathogens has been documented, as indicated by the case of the researcher at Fort Detrick who a few years ago came down with a case of glanders, a disease that is considered a potential biowarfare agent. The researcher had spent considerable time in his community before the diagnosis was made, a fact missing in the EA reference. There is considerable potential danger posed by the anticipated work with organisms genetically-modified to increase lethality or confer resistance to countermeasures, and only one release could be disastrous for millions of people.

Issues of safety of lab operations are especially important in light of the report released in February 2001 the by the DOE Office of Inspector General entitled "Inspection of Department of Energy Activities

Involving Biological Select Agents." The report indicated in the section "Results of Inspection," the report indicated that "[T]he Department's biological select agent activities lacked organization, coordination, and direction. Specifically, the Department's activities lacked appropriate Federal oversight, consistent policy, and standardized implementing procedures, resulting in the potential for greater risk to workers and possibly others from exposure to biological select agents and select agent materials."

These potential dangers need to be considered in the context of LLNL's well-documented history of leaks, spills, fires, explosions and accidents. In recent years, these have included a filter shredding accident that contaminated workers with curium, a chlorine gas leak that forced an evacuation, many inadvertent releases to the sanitary sewer, as well as an explosion that sent one employee to the hospital. Radioactive and toxic contaminants have migrated from DOE Operations at LLNL into the air, groundwater and soil both on-site and off-site, jeopardized the health of workers and surrounding communities. This history should be incorporated into the EA. The draft EA also needs to bring its estimate of what population could be affected by accidents in line with standard DOE/LLNL considerations of a 50-mile radius around LLNL embracing more than 7 million people, as opposed to the 1.3 million stated in the document.

Given this large at-risk population, the draft EA needs a more thorough examination of the potential impact of earthquakes and other natural disasters. Although it is asserted that quakes, fires and other natural disasters may effectively kill airborne agents this assessment may underestimate the potential survival and distribution of hardy organisms, such as anthrax or fungal spores, not to mention whatever might be bioengineered for such capability.

In conclusion, there are far better, and safer ways to protect our nation, and the world from biological weapons, and all infectious disease, than the development of a national network of facilities conducting ambiguous research with extremely lethal agents. Such facilities, including the proposed one at LLNL will likely encourage increased proliferation of deadly technologies that instead require effective primary prevention. Central to such preventive efforts should be a national commitment to a significantly strengthened Biological Weapons Convention.

Respectfully submitted,

Robert M. Gould, MD
President
SF-Bay Area Chapter
Physicians for Social Reponsibility

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-----Original Message-----
From: Edward Hammond [mailto:hammond@sunshine-project.org]
Sent: Friday, September 06, 2002 12:46 PM
To: rich.mortensen@oak.doe.gov
Subject: Comments on Proposed LLNL BL-3 Laboratory
Importance: High

6 September 2002

Mr. Richard Mortensen, Document Manager
LLNL BSL-3 EA
Lawrence Livermore National Laboratory
P.O. Box 808
Livermore CA 94551

Dear Mr. Mortensen,

This electronic mail contains Sunshine Project comments on the Draft Environmental Assessment for the proposed BL-3 facility at LLNL (DOE/EA-1442).

The Sunshine Project is an international non-governmental organization with offices in Austin, Texas and Hamburg, Germany. The Sunshine Project works against the hostile use of biotechnology, using research, publications, and advocacy to strengthen the global consensus against biological warfare and to ensure that international treaties effectively prevent development and use of biological weapons. The Sunshine Project is a federally recognized charity in Germany and the United States (501(c)3 non-profit organization). The Sunshine Project does not accept funding from the US government or from any military source.

I will send a paper copy of these comments to you by mail today. I would appreciate your acknowledgement of receipt of this e-mail.

Comments

1. The proposed BL3 laboratory is to be located in alarmingly close proximity to the EMBF, a modern and very large bioreactor facility with a capacity in excess of 1,600 liters. EMBF also contains equipment for preparing large masses of microbes for field release. Indeed, this is its purpose, and the LLNL website boasts of this dual-use capability. The facility has already produced biodegradant organisms with bioweapons potential. The position of director of this facility demands a high security clearance, an unusual requirement for a facility whose stated purpose is to produce organisms for

bioremediation.

The proposed BL3 laboratory will work with a large number of BW pathogens. It will be modern, expert staffed, and militarily associated. The overlay of this proposed facility and the EMBF amounts to an unmistakable signature of an offensive biological weapons program capable of production of weaponized pathogens in quantities sufficient for theater scale use.

The collocation of these facilities is extremely ill advised. Both domestically and internationally, this will raise deep suspicions about BW-related activities at LLNL, particularly considering the United States' rejection of a verification system to the Biological and Toxin Weapons Convention (BTWC) and DOE's encouragement of US policymakers to scuttle the draft agreement. These suspicions will be enhanced by LLNL's mission to produce weapons of mass destruction and will be detrimental to US foreign policy and the worldwide prohibition on biological weapons.

2. The draft EA indicates that, within the proposed BL3 facility, BW agent cultures may be produced in quantities of up to one liter. It is extraordinarily difficult to envisage a legitimate prophylactic use for this quantity of BW pathogen. For example, the Rickettsia Coxiella burnetti, causative agent of Q fever, is apparently among those agents to be cultured at the proposed facility. The human inhalational infectious dose of Q fever is considered to be 10 organisms. The draft EA states that the proposed facility will produce up to one liter of agent at 10(8) organisms per milliliter. Distributed under ideal circumstances, the agent contained in one liter of LLNL Q fever culture (100 billion organisms) is theoretically capable of producing 10 billion human infections. That is an inhalational dose for every human being on the planet, with inoculations left over for many of the world's cows, sheep, and goats. Similar calculations may be made with other agents.

Production of gram or sub-gram quantities of any agent is sufficient for defensive research. For what justifiable and legal purpose does LLNL anticipate production of liter batches of BW agent? Such large-scale production will draw suspicion from other countries and increases health risks to surrounding communities. In addition, the draft EA indicates that such quantities of agent may be removed from the proposed facility. For what defensive and legal purpose would LLNL produce and distribute such large quantities of pathogenic agent?

3. The immunization status of laboratory workers is critical information for tracking the suspected release of pathogens, whether

accidental or deliberate. The draft EA indicates that BL3 lab workers would be offered appropriate immunizations. Will the complete vaccination status of all laboratory workers be available to all employees of LLNL, residents of Livermore and surrounding communities, and state and local health officials? The absence of such transparency will impede investigation of possible agent leaks and sour relations between LLNL and surrounding communities in the event of unusual epidemiological events involving communicable diseases.

4. The draft EA indicates that aerosol challenge tests on rodents are planned for the proposed facility. In order for this type of testing to yield useful information for a biological defense program, the challenge agents must be prepared in a manner to simulate warfare conditions and technologies used by potential enemies. In other words, the challenge tests will require agent weaponization. Preparing such agents will require specialized equipment beyond a collision nebulizer, such as grinding (to reduce particle size) and drying equipment. This equipment is not mentioned in the EA, much less the enhanced dangers posed by weaponized agent. The operation of this equipment poses health risks to laboratory workers and the surrounding community because it is designed to render the agents more infectious and pervasive in an open environment. Accidents performing these procedures are particularly dangerous. The draft EA is therefore deficient in failing to address risks posed by weaponized agents and the weaponization of agents.

5. The draft EA claims "An on-site BSL-3 facility would provide safe and secure manipulation and storage of infectious agents at a time when these issues are imperative to national security". It is accurate to state that biodefense has risen in national priorities, considering the anthrax attacks of 2001, and particularly that are likely to have been perpetrated by a US biodefense worker. The EA's justification, however, nonsensically mixes "issues" with "facility". The heightened national interest in biodefense, in itself, is not a justification for facility at LLNL. Indeed, with the US biodefense program already posing a concrete threat to domestic security and dwarfing all other biodefense programs in the world in size and scope, the emergence of biodefense as a national policy priority issue signals the need for reconsideration of the wisdom of many US biodefense activities, rather than the mindless proliferation of laboratories handling extremely dangerous agents. Clearly, with other NNSA labs proposed, a large NIAID lab construction program, renewed USDA biodefense work, and US Army biodefense expansion, the claimed benefits of this proposed lab must be weighed not only against its risks; but must be justified vis-à-vis the numerous other

similar facilities that exist, or are proposed, at DOE and other sites. This will require a DOE programmatic EIS of biodefense expansion with an interagency element to ensure that risks are not being multiplied by construction of duplicative facilities by multiple governmental agencies, with each facility posing threats.

6. The draft EA indicates that a LLNL biosafety committee will review experiments. Does this committee operate under full public scrutiny? Are all records of the committee public? Are all of its meetings open to public participation? The inclusion of "members of the public" on the committee cannot be equated with public access and participation in its decisionmaking. All documentation of experiments requiring approval by the biosafety committee, and particularly those involving genetic modification of any agent, must be available to the public.

7. The draft EA refers to "pending" work on BW agents at LLNL (as opposed to future work). What is this work, which has been defined, and why is it not discussed in more detail in the draft EA? Identification of this work by appending the relevant project documents to the EA would enable better public understanding of LLNL activities. LLNL here has the opportunity to discuss planned activities and to establish clear and open lines of communication with the public regarding its biodefense research; but is choosing not to. This may be interpreted as a disturbing indication that LLNL intends to keep the public in the dark as to the activities conducted in the proposed lab.

8. The draft EA mentions a number of organisms likely to be cultured in "the near term" (p. 17.). Of these, two - Coccidioides immitis (causative agent of valley fever, not to be confused with Rift Valley Fever) and Brucella spp. (causative agents of brucellosis) - are regarded as incapacitating, rather than lethal, biological weapons and are unusual choices for BW research with a defensive intent, particularly at a DOE facility.

Both brucellosis and valley fever incapacitate their victims; but are readily treatable and rarely fatal. Brucella is only known to have been weaponized by the United States and the former Soviet Union. Brucella is thought to have been the first agent weaponized by the US offensive bioweapons program, which has long experience with the agent and the illnesses caused. Brucellosis, while serious, is only fatal in approximately 5% of untreated cases. Similar to Brucellosis, up to 95% of the victims of valley fever spontaneously recover. Again like brucella, valley fever is not generally human-to-human transmissible. There is no record of valley fever ever having been

weaponized by any state.

Incapacitating agents - particularly those with a long incubation period, such as Brucella - are very unlikely to be used against the United States. A terrorist - or state - posing a biological threat to the United States will opt for lethal agents. By contrast, a large, technologically advanced, and well-armed country, such as the United States, is far more likely to choose incapacitating BW as a weapon, in order to weaken civilian and military populations prior to an invasion. Because incapacitating agents pose a minor security threat to the US, there is no apparent defensive purpose of research with these agents at this proposed facility.

Thank you very much for attention in this important matter. I look forward to receiving LLNL's response as soon as possible.

Sincerely,

Edward Hammond
Director

RECEIVED 8/20/02

Dear Sir:

We've recently learned of live strains of virus & germs coming to the Livermore Lab. We are completely opposed to this. We have enough of these labs already. How about looking for ways to advance & evolve all people in ways of peace instead of subjugation & threats?

Sincerely,

Carl & Wendy Hassell
Tracy

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
5997 PARKSIDE DRIVE ♦ PLEASANTON, CALIFORNIA 94588-5127 ♦ PHONE (925) 484-2600 FAX (925) 462-3914

August 23, 2002

8/26: LEFT VM RE: RECEIPT OF COMMENTS AND EXTENSION OF COMMENT PERIOD TO 9/7.

Mr. Richard Mortensen, DOE NEPA Document Manager
United States Department of Energy
Livermore Site Office, L293
P.O. Box 808
Livermore, CA 94551

Re: Draft Environmental Assessment for Proposed Construction and Operation of a Biosafety Level 3 Facility at Lawrence Livermore National Laboratory

Dear Mr. Mortensen:

Zone 7 has completed its review of the referenced NEPA document. Our understanding is that the proposed project consists of the construction and operation of a 1,500 square-foot laboratory facility within the Lawrence Livermore National Laboratory (LLNL) site. The site for this facility is approximately 0.25 acres. It currently consists of paved parking and a road in the vicinity of Building 360 complex.

Our comments are made in the context of Zone 7's responsibilities within its service area to provide wholesale treated water, untreated water for agriculture and irrigated turf, stream management and flood protection, and groundwater management. Zone 7 does not have any existing or planned flood control facilities nor water production/transmission in the project vicinity.

The draft environmental assessment states that wastewaters generated by this facility will be disposed of to the City of Livermore's sanitary sewer system. Municipal sewer systems typically have leaking pipe joints. Also, the City of Livermore recycles a portion of its treated wastewater for turf and landscape irrigation over the Valley's main groundwater basin, and it may also someday store recycled wastewater in one of Zone 7's Chain of Lakes. Our primary concern for this project is that infectious materials, biotoxins, or pharmaceuticals might reach the groundwater through one of the above pathways. Our comments have been organized to follow the order of the draft environmental assessment, as follows:

1. Page 8, Proposed BSL-3 Facility Location and Construction Measures

   This paragraph mentions that the proposed project would be within an existing paved parking area. If construction is contained to the existing paved parking area, a drainage fee for Zone 7's Special Drainage Area (SDA) 7-1 may not be required, since no impervious area would be created. However, if the construction does create new impervious area, it will be subject to SDA 7-1 drainage fees.

2. Pages 22 and 23, Waste Generation at the BSL-3 Facility

   The first paragraph on page 23, states that "soluble or liquid waste materials generated from laboratory operations can be disposed of in the laboratory sinks after first being treated with disinfectants." Please confirm that simple disinfection will be adequate for all constituents of concern. Will disinfection always be performed?

3. Page 34, Sanitary Liquid Waste and Page 45, Waste Management

This paragraph states that "...liquid wastes as generated from the proposed BSL-3 laboratory operations would be discharged to a retention tank system, for containment, characterization, and disinfection as needed, prior discharge to the sanitary sewer system." Whereas the second paragraph on page 45 states that "There would be no retention tanks or need for waste accumulation areas since no hazardous waste would be produced..." These statements need clarification.

If the liquids are going to go to a retention tank for "containment, characterization, and disinfection as needed" please provide some discussion as to the process which determines whether disinfection is needed. The sentence on page 34 that states "...no discharge limits currently exist for infectious materials which are commonly discharged by healthcare and veterinary facilities and laboratories or homes" does not justify ignoring the need for monitoring, but instead, might point to possible flaws in the existing regulations. Are the potential discharges from a BSL-3 facility the same as those for healthcare and veterinary facilities and laboratories or homes?

4. Pages 39-41, Potential Pathways for Infectious Agents to Escape BSL-3 Containment, Water-borne Transmission

In the paragraph on Water-borne Transmission, page 41, it states "Water exiting through the sink drains would be disinfected, if necessary, and would be diluted by mixing with sanitary wastewater in the sewer system and at the LWRP facility." As mentioned above, what determines whether disinfection will be needed? Will disinfection and dilution be effective for all of the potential constituents of concern? What is the potential for discharge of pharmaceutical pollutants? What is the potential for discharge of resistant strains of bacteria and viruses?

Please feel free to call me at (925)-484-2600, ext. 400, or Jack Fong at ext. 245 if you have any questions or comments.

Sincerely,

Jack Horen for

Jim Horen
Principal Engineer
Advance Planning Section

JH:JF:jr

cc: Ed Cummings
John Mahoney
Yan Kee Chan
Dave Lunn
Diana Gaines
Matt Katen
Jack Fong

P:\Advplan\LLNL-BiosafetyFacility.doc

-----Original Message-----
From: marylia@earthlink.net [mailto:marylia@earthlink.net]
Sent: Saturday, September 07, 2002 11:58 AM
To: rich.mortensen@oak.doe.gov
Subject: Add'l comment on DOE/EA-1442

September 7, 2002

Mr. Richard Mortensen
DOE NEPA Document Manager
US DOE, Livermore Site Office, M/S L-293
PO Box 808
Livermore, CA 94551

Dear Mr. Mortensen:

I am writing to supplement my earlier comment on the Environmental Assessment (DOE/EA-1442) for the construction and operation of a Biosafety Level 3 (BSL-3) facility at the Department of Energy's (DOE) Lawrence Livermore National Laboratory (LLNL).

Tri-Valley CAREs (Communities Against a Radioactive Environment) is a Livermore-based non-profit organization founded in 1983 by residents of the Tri-Valley area living in the shadow of the Livermore Lab. The group seeks to monitor activities at the Livermore Lab, safeguard community health and the environment, effect conversion of LLNL's mission from weapons of mass destruction to peaceful purposes and involve the public in decision-making on nuclear weapons and related policy issues. It is on behalf of the organization's board and members that I submit comments on this draft EA.

1. The draft EA was released with a 30 day public comment period and no address, email or fax number anywhere in document telling interested members of the public where or how to submit comments. Upon receiving written and phone requests for a 30-day extension -- including from Tri-Valley CAREs -- DOE decided to extend the public comment period by 15 days. While we appreciate the extension, and the timely manner in which DOE made the decision, we note that a 15 day extension is an insufficient amount of time to permit a comprehensive review of the draft EA, its 2 appendices and other background material not included in the EA, but necessary nonetheless in order for a member of the public to comment adequately.

2. The "purpose and need" for the proposed action (i.e., construction and operation of a multi-lab BSL-3 facility at LLNL), is not sufficiently justified in the draft EA and does not meet the requirements of the National Environmental Policy Act (NEPA). Specifically, in the draft EA, the central "purpose and need" is given as:

"The several key off-site BSL-3 facilities that conduct work for LLNL in support of NNSA, are often heavily committed to other projects or tailored to work with microorganisms not of specific interest to NNSA..." (page 7), and

"The few offsite commercial of governmental BSL-3 facilities currently available are often heavily committed to other projects or tailor

their work with specific types of microorganisms... (executive summary).

It is my understanding after talking to LLNL staff and others that one of the BSL-3 facilities used by LLNL is the Centers for Disease Control and Prevention (CDC) facility in Fort Collins, Colorado. I believe that there are several other candidate (and some currently utilized) sites as well. One would, therefore, expect that the text of the draft EA would document in detail DOE's serious and good-faith attempts to negotiate a memorandum of understanding or pursue other appropriate method(s) to resolve this "presenting" issue of DOE/LLNL obtaining sufficient time and means to conduct a reasonable scope of work (e.g., development of a hand held bio-detector) at an outside facility.

Instead, outside of making the above-listed and related assertions, the draft EA is silent on this topic. There is no indication of which BSL-3 facilities LLNL and/or DOE currently use, no analysis of their capabilities, no list of alternate facilities and no record showing attempts to improve the working relationships (e.g., between two federal agencies, DOE and CDC) so DOE can better utilize outside facilities.

Moreover, a plethora of new and/or expanded facilities are being planned by an alphabet soup of federal agencies (in addition to CDC). Before DOE ventures into this new mission area (running BSL-3 facilities) it must look comprehensively at the capabilities that are already out there or are reasonably foreseeable so as not to unnecessarily duplicate capabilities by constructing a BSL-3 facility at LLNL.

Additionally, the draft EA states that "DOE does not have under its administrative control any microbiological laboratory facility capability beyond Biosafety Level (BSL)-2" (executive summary). While this is narrowly true, it overlooks the fact DOE has made a decision to go forward with a BSL-3 facility at its Los Alamos National Laboratory (LANL) in New Mexico.

Tri-Valley CAREs believes that the BSL-3 facility at LANL should not proceed without benefit of a project-specific and a Programmatic Environmental Impact Statement (EIS). However, DOE is nonetheless required by the NEPA to analyze whether the LANL BSL-3 facility would -- even in part or in tandem with other facilities -- provide an alternative to construction of the proposed BSL-3 facility at LLNL.

The draft EA lacks this or any other alternatives analysis (beyond a simple assertion that no alternative exists to the agency's proposed action).

3. The timeline for the LLNL BSL-3 facility is shocking -- and suggests that DOE is neither serious about NEPA nor public involvement in decision-making. The draft EA states: "Construction of the BSL-3 facility is estimated to start in FY 2002 and take approximately 6 months to complete" (page 11).

To begin construction in fiscal year 2002, activities would need to commence before September 30, 2002 -- a scant two weeks away. This suggest that DOE's "go - no go" decision is based on a foregone conclusion and not the NEPA process. Further, the 6 month construction period listed in the draft EA suggests that DOE has already decided to use a prefabricated building -- again in advance of conducting a good faith NEPA review.

4. The draft EA states the BSL-3 facility will increase biological

shipments in and out of LLNL as much as ten-fold (page 20) during an unspecified start up phase. Bio-agents would be permitted to arrive by mail, commercial delivery service, courier and other authorized entity. A more comprehensive analysis of accident scenarios and potential risk is called for. The draft EA, in essence, simply asserts that procedures will be followed. Analysis of the potential for terror attack during these procedures (or at any other time) is strikingly absent. Thus, there are no mitigation measures, no contingency plans listed, etc.

5. To augment my earlier comment on the lack of security measures in the draft EA, I would ask if any analysis has been done on the vulnerability (e.g., to airplane attack) of a prefabricated building vs. one constructed by conventional means from the ground up. This (and other) analyses need to be conducted before the process moves forward, not at some later date (after key decisions are already made).

6. As mentioned in my earlier comment, DOE's Livermore Lab has a history of serious pollution problems with its hazardous and radioactive materials. These problems are relevant the question of potential impacts to worker and community health due to operation of a BSL-3 facility, in part because the BSL-3 would be under the aegis of the same parent agency and operated largely by existing LLNL personnel. The following items augment the list in my prior comment. This list, prepared in 1997, is a snapshot and is neither comprehensive or exhaustive. It should, however, further demonstrate the need for more thorough NEPA analyses of potential accidents, hazards and risks at the proposed BSL-3 facility.

a) Discharges to city sewer system:

In May, 1997, the City of Livermore cited LLNL for chronic discharges of heavy metals and corrosive chemicals into the municipal sewer system. According to city officials, there had been 14 releases from LLNL above its permit limits since January, 1996, a rate of about one violation per month. A February, '97, accident involved a discharge of silver, costing $41,000. Another discharge, in March, '97, this time of lead, cost $8,000.

b) Accidents in 1997 alone:

February -- LLNL doctors cut a small hunk of plutonium-contaminated tissue out of an employee's thumb after the worker had accidentally stuck himself with a sliver of the radioactive metal during routing cleanup.

March -- Three LLNL workers were contaminated when uranium filings caught fire.

April -- It was reported that a chlorine gas leak forced about 20 workers to flee after an alarm sounded.

May -- The City of Livermore cited LLNL, again, for chronic discharges of heavy metals and corrosive chemicals.

June -- It was reported that in May, '97, two workers were contaminated with tritium (radioactive hydrogen) while packaging the radioactive waste in the Tritium Facility.

July -- On July 2, workers shredding used air filters were radioactively contaminated. One worker was contaminated with curium, an alpha emitter, on his chest, face and in his nostrils. A DOE report credited inadequate safety procedures for this accident. In another July, '97 accident a hazardous waste technician accidentally mixed nitric acid and alcohol while workers were "bulking," (i.e., pouring spent chemicals into

waste drums). This combination of chemicals could cause fire, explosion or fumes, and resulted in fumes that triggered alarms and caused 25 workers to evacuate and LLNL to suspend "bulking" for a week.

c) Noncompliance with safety procedures:

As mentioned above, on July 2, 1997, a worker at LLNL was radioactively contaminated with curium in an accident that DOE itself admitted was due to inadequate safety procedures. Also, in this instance, procedures that had been recently put into place with the state of California's guidance were apparently ignored by LLNL, which raises questions about whether LLNL really follows agreed-upon safety procedures. This is underscored by another recent LLNL report confirming that a total of 15 criticality violations (a "criticality accident" is a runaway nuclear chain reaction) occurred over a two-month period (mid-May, '97 to mid-July, '97) in LLNL's plutonium building (Building 332) -- where, again, safety procedures were ignored. The internal LLNL report on the violations reveals deep, pervasive, systemic deficiencies in management, worker understanding and employee attitudes, citing 1) inadequate training, with workers unaware of rules and some even stating that there is nothing wrong with violating rules to get a job done; and 2) ineffective management, with supervisors not recognizing the problem. It is therefore reasonable that the NEPA review in the draft EA should not rely DOE asserting that safety procedures will be followed in the proposed BSL-3 facility.

d) Notices of Deficiency and Notices of Violations from the State of California Dept. of Toxic Substances Control (DTSC):

A May 21, 1997 letter from Rick Robison, Unit Chief of DTSC's Statewide Compliance Division to Harry Galles, Head of LLNL's Environmental Protection Dept., cites the following combined waste (CW) violations: 1) possible hazardous & radioactive constituents of CW remaining on-site weren't identified; 2) waste generating processes for wastes inspected were not identified; 3) accumulation start dates of CW were not listed at Satellite Accumulation Areas; 4) the treatment process description, as well as the reason for the treatment, for CW that was treated and then sewered was not provided, nor was information provided regarding the disposition of the sludge produced by the treatment process; 5) a date of treatment was not provided; 6) no information was provided for attempts to find available treatment and/or disposal options for CW; 7) no manifest number was given for CW shipped off-site.

A May 23, 1997 Inspection Report by Barbara Barry, Hazardous Substances Scientist with DTSC's Statewide Compliance Division, refers to the May 23, 1993 Stipulation and Order #HWCA 93/94-047 signed by DTSC and LLNL for the latter's violations of the Hazardous Waste Control Law from 1989 until 1992. Ms. Barry's May 23, 1997 Inspection Report also cites later violations by LLNL, including: 1) DTSC's 8-14-92 Compliance Evaluation Inspection (CEI) report's findings of 11 violations including storage of incompatible wastes, failure to certify a repaired tank before returning it to service, having an open waste container, and failure to complete employee training; 2) DTSC's 8-6-93 CEI report's findings of 17 violations, including improper storage of incompatible wastes, incomplete inspection logs, inadequate aisle space in waste storage area, improper labeling of hazardous wastes, inadequate employee training, failure to do tank certification, storage of waste over 90 days without authorization, failure to maintain land ban notification/certification records, and falsification of records; and 3) DTSC's 6-1-94 field-issued CEI report's findings of 7 violations,

including storage of hazardous waste over 90 days without authorization or permit, failure to properly label hazardous wastes, failure to meet treatment standards, notification failures, failure to maintain inspection logs with required information, failure to inspect hazardous waste tankers each operating day, and failure to provide annual refresher employee training.

Ms. Barry's May 23, 1997 Inspection Report also describes how LLNL's Total Waste Management System (TWMS), a method of tracking waste sitewide (e.g., waste source, treatment method, treatment results, storage, discharge, movement throughout the site, ultimate destination, shipping date and manifest number) using computer and waste drum bar codes, was inoperable at the time of her inspection.

Ms. Barry's May 23, 1997 Inspection Report also cited LLNL for violating 1) 22 California Code of Regulations section 6626.23(a) (1-3); (b) and (e) for shipping CW off-site without a manifest; 2) 22 CCR 66265.71(a)(1-6) for receiving CW from Site 300 without a manifest; (3) 22 CCR 66262.34 (f) (1-3) for storing CW labeled "Radioactive Waste Only," instead of using the required hazardous waste label (the statute requires hazardous waste labels for all Resource Conservation and Recovery Act (RCRA) wastes, all mixed wastes, all California wastes and all combined wastes, in addition to any labeling required by the AEC (sic) for the radioactive portion of the waste); 4) California Health and Safety Code (CH & SC) sections 25200.5(b)(1-2) and (c), and 25201(a) for storing and treating CW's not listed on the DTSC-approved Part A permit as well as treating CW with processes not listed on the DTSC-approved Part A permit, and also for storing CW for more than 1 year without DTSC's written authorization (this latter also violates CH & SC section II part 1(a) and the Interim Status Document issued by DTSC); 5) 22 CCR 66265.13(a)(1) and (b)(1-2) for excluding from its Waste Analysis Plan (WAP) the appropriate methodolgy and parameters for making analyses of California hazardous wastes as well as RCRA hazardous wastes; and 6) 22 CCR 66265.16(a)(1-2) and (3)(A-F); (c) and (d)(3) for inadequate training procedures, in that a) LLNL's Training Plan for employees in the Hazardous Waste Management Dept. (HWMD) was below minimum requirements, and b) the WAP requires extensive lectures and practical training in sampling procedures and the handling of samples, yet none of the HWMD training descriptions referred to any practical training other than first aid and fire/earthquake training.

DTSC's 3-7-97 Notice of Deficiency re: LLNL's Part B Application for the WTSF permit, signed by Pauline Batarseh, Unit Chief of DTSC's Northern California Permitting Branch, found 160 deficiencies.

This does not complete my comments on the draft EA, but the comment deadline is at hand. Again, the comment period should have been extended for 30 days, not 15.

Thank you for this opportunity to comment on DOE/EA-1442.

Sincerely,

Marylia Kelley
Executive Director
Tri-Valley CAREs

Marylia Kelley
Executive Director,
Tri-Valley CAREs
(Communities Against a Radioactive Environment)

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Web site: http://www.trivalleycares.org is our new web site address. Please visit us there.

Tri-Valley CAREs

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Peace Justice Environment since 1983

Citizens Education Project, Salt Lake City, UT
Coalition for a Safe Lab, Hamilton, MT
Los Alamos Study Group, Santa Fe, NM
Nuclear Watch of New Mexico, Santa Fe
Physicians for Social Responsibility, SF-Bay Area CA
The Sunshine Project, Austin, Tx
Tri-Valley CAREs, Livermore, CA
Western States Legal Foundation, Oakland, CA

Non-Profit Coalition Calls for a National Reassessment of the Biodefense Building Boom

(October 14) A non-profit coalition is calling upon Congress and the public for an urgent national reassessment of America's biodefense spending. The coalition contends that the $6 billion in biodefense that Congress hastily appropriated after last fall's anthrax attacks have triggered a laboratory rat race more likely to undermine US national and environmental security than to enhance it.

The groups dedicated to research safety, arms control, and scientific responsibility do not oppose all biodefense work; but cite a range of concerns and evidence in support of their demands (see attached quotes and contact sheet). The Coalition says that unless a national reconsideration is done, competition for biodefense funding and poor planning will combine with dangerous results, including a needless proliferation of facilities handling biowarfare agents and a spread of the knowledge needed to wage biowarfare. This poses dangers to local communities, to arms control, and US national security, they claim. Instead of emphasizing biotech band aids from facilities pursuing dream vaccines and working in secret, the coalition says spending should focus on unclassified, public research to bolster local public health capabilities.

"The number of new biodefense biosafety level 3 and 4 laboratories being developed far exceeds what is prudent and necessary, and we are asking Congress to freeze biodefense laboratory construction until a cross-cutting federal review ensures that the massive new investment isn't going away, and wouldn't be better spent elsewhere," said Steve Erickson of the Citizen's Education Project in Salt Lake City. According to Edward Hammond of the Austin, TX-based Sunshine Project, "Government and academic labs are responding less to bona fide needs than the urge to build power and revenue centers for what they hope is a perpetual biodefense boom. This will result in a dangerous proliferation of bioweapons agents and the knowledge to use them."

"Too many agencies want too many facilities, likely leading to duplication and unnecessary danger.". Colin King of Nuclear Watch of New Mexico in Santa Fe, "Agencies are confusing the public by trying to gain lab approval on a one-by-one basis, obfuscating the risks and ramifications of large national programs."

The coalition is calling for programmatic environmental impact assessments and insists that Congress and the General Accounting

Office carefully examine the programs of the National Institutes of Health and the Departments of Defense, Energy, and Agriculture both individually and for their collective implications. "Congress and the GAO need to identify the pork, the overlap, the national and local dangers, and address the bigger question of whether the proposed construction of more than a dozen new (or upgraded) biodefense labs really serves America's domestic and international interests" argues Tara Dorabji of TriValley CAREs in Livermore, CA.

The coalition is currently working on biodefense lab and program expansions proposed at Lawrence Livermore National Laboratory in California, Los Alamos National Laboratory in New Mexico, Utah State University and Dugway Proving Ground in Utah, Rocky Mountain Laboratory in Montana, and the University of Texas in Galveston. Other new and upgraded BL3 and 4 labs are proposed in San Antonio and Lubbock, TX, Manhattan, KS, Albuquerque, NM, Davis, CA, Honolulu, HI, and Plum Island, NY. The National Institute of Allergy and Infectious Diseases (NIAID), part of NIH, is promising up to a dozen "Centers of Biodefense Excellence", each with BL3 and/or 4 capacity.

Additional Information, Contacts, Quotes

The coalition members are Citizen's Education Project (Salt Lake City, UT), Coalition for a Safe Lab (Hamilton, MT), Los Alamos Study Group (Santa Fe, NM), Nuclear Watch of New Mexico (Santa Fe), The Sunshine Project (Austin, TX), Tri-Valley CAREs (Livermore, CA) and Western States Legal Foundation (Oakland, CA). Members cite a range of concerns and evidence in support of their demands, including:

Domestic Threat: The FBI's investigation of last fall's anthrax letters has determined that the attack was perpetrated with a US biodefense anthrax strain, and suggests that the author of the attacks was a biodefense insider with hands-on training courtesy of the federal government. Under current plans, thousands of new people will gain access to bioweapons agents and knowledge of their preparation and use. How is the government making sure that it isn't sowing the seeds of domestic terrorism?

Manipulation of the Facts: In California, Lawrence Livermore National Laboratory (LLNL) wants a new biodefense lab smack dab in the middle of a major nuclear weapons design facility, and right next door to a bioreactor (fermenter) facility potentially capable of producing agents on a massive scale. These issues were brushed aside in the lab's draft environmental impact assessment. LLNL claims it needs the new facility because it has insufficient access to similar labs nearby and because the Department of Energy has no BL3 capacity. "LLNL is manipulating the truth to its convenience." says Tara Dorabji of Livermore-based Tri-Valley CAREs. "First, LLNL's environmental assessment fails to give due consideration to the civilian-mission BL3 facilities already in existence. Second, LLNL conveniently ignores the fact that DOE also wants to build a BL3 facility at the Los Alamos Lab in New Mexico. And, finally, new information has surfaced showing LLNL involvement in a proposal to build BL4 and BL3 labs in nearby Davis, California."

Opaque Proposals: In Utah, the US Army's Dugway Proving Ground wants a 200% increase in its biodefense activity, including BL3 lab

upgrades and another aerosol chamber, a very controversial piece of testing equipment with many potential offensive uses. The Army has produced a huge draft environmental impact assessment (DEIS), but according to Steve Erickson of the Citizens Education Project in Salt Lake City, "The DEIS is 1000 pages long, but it's so vague that it's impossible to fairly assess what the Army wants to do. They want to conduct many more in-lab and open-air tests, but won't say with what and when or under what conditions until future plans and studies are completed and rubber-stamped by the brass. There is no independent oversight of this facility, and given its penchant for secrecy and its track record of exposing civilians and contaminating the environment with its biological, chemical, and radiological tests, Dugway can't be trusted with such blanket permission to expand programs and missions."

Poor Community Consultation: In Hamilton, Montana, the National Institutes of Health (NIH) wants to build a new BL4 facility at Rocky Mountain Labs (RML). NIH originally proposed to begin building in February 2003 with only a brief environmental assessment and a two week public comment period. Hamilton's Coalition for a Safe Lab demanded more public participation and a more thorough review of the project. NIH relented and is now conducting an Environmental Impact Statement, which will delay groundbreaking. Then, RML put together a community outreach committee; but decided the meetings would be by invitation only. The Coalition protested again. At the last minute, RML opened the meetings to the public; but still required interested people to call ahead and advise the lab that they would like to attend.

Coalition for a Safe Lab organizer Mary Wulff, says, "When we arrived for their meeting we were welcomed with the news that we needed a security escort to use the restroom. The meeting was scheduled for 2 hours. During that time we listened to NIH talk about public relations with their community, children's programs, and bus rides across the NIH campus. Ten minutes were left for our twenty community 'leaders' to comment and ask questions. Several of them didn't comment at all. Our Coalition previously presented RML with a comprehensive list of questions, which they have not yet answered. RML's assistant director said at the meeting that they definitely will not be working with smallpox or Ebola; but conflicting information was given to a Coalition by RML's biosafety committee chairman. The chairman said that if the world situation changes then 'all bets are off'. It's unfair to thrust a national facility like this on a small community, especially in the absence of a comprehensive national review."

Ephemeral Promises? In Galveston, Texas, the University of Texas (UT) is building a new BL4 lab. UT claims good community relations for the effort, which began before September 11th, 2001. UT held public meetings and in July 2001, dispelled criticism that the lab's work might be "secret or ominous" with the public declaration that "No classified research will be performed." In September 2002, the Austin-based Sunshine Project wrote the lab's Director to verify that the University of Texas stands by its no-secrets pledge, and to request the lab's biosafety committee transparency rules. The BL4 that prides itself on community relations did not reply.

Dangerous Relationships With Weaponsmaking: In New Mexico, a number of non-profit organizations are asking tough questions of Los Alamos National Laboratory (LANL), which wants to build a new BL3 facility. Greg Mello of Los Alamos Study Group in Santa Fe says "Does it really make sense to put a biodefense lab at the nation's largest facility for designing, testing, and producing weapons of mass destruction? Los Alamos has little conspicuous expertise in biology, but it does have a 60-year history of secrecy and compartmentalization devoted to weapons development. What is the rest of the world going to think? What should they think? Los Alamos is not inspectable. A decision to build a bioweapons 'defense' facility at such a place could cripple efforts to build a better nonproliferation regime for biological weapons."

New Mexico non-profits are fed up with LANL's dismal environmental and safety compliance. In August, Nuclear Watch of New Mexico filed suit in federal court, arguing that LANL and DOE have failed to take the hard look at their bioweapons research program that is required under federal law. "We hope to compel DOE to undergo a Los Alamos-specific Environmental Impact Statement, and a Programmatic EIS for the Chemical and Biological National Security Program. If we are successful, this will greatly increase public scrutiny of DOE's program, and make it more difficult for the agency to continue to avoid environmental and public health issues," said Nuclear Watch's Colin King.

Misplaced Priorities: The coalition sees overinvestment in high-tech facilities to handle pathogens as the wrong emphasis for protecting the public against biological agents - whether naturally-arising or intentionally introduced by terrorists. Dr. Robert M. Gould, President of the San Francisco Bay Area chapter of Physicians for Social Responsibility states "We need to develop a comprehensive, primary-prevention approach towards all forms of infectious disease, which means providing adequate resources to combat AIDS, antibiotic-resistant tuberculosis, as well as the rise in diseases such as malaria predicted to increase from global climate change. According to a UN report from 2000, $10 billion a year would provide enough clean water and sanitation to cut by up to one third the 4 billion cases of diarrheal disease that kill 2 million people every year."

International Ramifications: According to the coalition, the emphasis on labs doing work such as aerosol challenge tests, particularly by the Defense and Energy Departments, runs terrible risks of being misinterpreted by other countries and triggering a bioweapons research race, or even worse. Says Jackie Cabasso of Western States Legal Foundation in Oakland, CA: "With biological weapons, the line between offense and defense is exceedingly difficult to draw. In the end, secrecy is the greatest enemy of safety. Last year, the US single-handedly blew apart an international system for inspections of these kinds of laboratories, a system that would have made great strides toward ensuring that biodefense labs aren't abused for offensive purposes. Having thumbed our nose at the world, the US is now massively expanding its biodefense program, mostly in secretive facilities. Other countries are going to be suspicious. This bodes badly for the future of biological weapons control."

Primary Contacts for this Release:

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Colin King, Nuclear Watch of New Mexico (Santa Fe), (505) 989-7342, colinking@nukewatch.org

Contacting All Coalition Members

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Message-ID: <4.1.20020906132242.00972a90@pop.earthlink.net>
From: marylia@earthlink.net
To: "Rev Carol Cook" <saintbarts@aol.com>
Subject: LLNL bio-warfare agent facility - Sign and email this comment
  tod ay!
Date: Fri, 6 Sep 2002 13:23:37 -0700
MIME-Version: 1.0
X-Mailer: Internet Mail Service (5.5.2656.59)
Content-Type: multipart/alternative;
      boundary="------------InterScan_NT_MIME_Boundary"
Content-Transfer-Encoding: 7bit

Dear colleagues:

Below, please find a comment letter -- ready for you to send -- on the proposed construction and operation of a BSL level 3 bio-warfare agent facility at the Department of Energy's Livermore Lab. Type your name and address at the end of the letter and then email it by Saturday, Sept. 7 to: rich.mortensen@oak.doe.gov.

If you wish to add any additional comments, please feel free to do so. This is an extremely important issue -- as you will see from the text. Thank you in advance for sending this. --Marylia

September 6, 2002

r. Richard Mortensen
DOE NEPA Document Manager
US DOE, Livermore Site Office, M/S L-293
PO Box 808
Livermore, CA 94551

by email: rich.mortensen@oak.doe.gov

Dear Mr. Mortensen:

I am writing to comment on the Environmental Assessment (DOE/EA-1442) for he construction and operation of a Biosafety Level 3 (BSL-3) facility at he Department of Energy's (DOE) Lawrence Livermore National Laboratory (LLNL).

Need for a Full EIS

A BSL-3 facility would allow LLNL to experiment with a broad spectrum of bio-toxins and biological agents including anthrax, bubonic plague, botulism, small pox and even genetically modified lethal bio-warfare agents. This is a new program that, if inadequately analyzed before proceeding, could endanger workers and the community. Thus, it is important that further environmental review in the form of a project specific Environmental Impact Statement (EIS) be conducted.

LLNL Operation History is Relevant

The Livermore Lab has a history of leaks, spills, fires, explosions and accidents. In recent years, these have included, but are not limited to, a

chlorine gas leak that forced an evacuation, a filter shredding accident that contaminated workers with curium, numerous inadvertent releases to the sanitary sewer and an explosion that sent one employee to the hospital. Radioactive and toxic contaminants have found their way from DOE operations at LLNL into the air, groundwater and soil on-site and off-site, and have jeopardized the health of workers and surrounding communities.

This operational history, which was not included in the draft EA, is relevant to the proposal to site a BSL-3 facility at Livermore; certainly as relevant as the operational history of non-DOE facilities that is outlined in the draft EA. Clearly, a proposal to allow the use of potentially deadly bio-agents and bio-toxins at a facility with such a spotty safety record requires a comprehensive analysis of the risks and thorough environmental review. The EA lacks the level of analysis necessary to inform decision-making.

Need for Programmatic Review

For 50 years Livermore Lab has been one of the nation's two primary nuclear weapon design labs, along with Los Alamos National Lab, in New Mexico. A BSL-3 facility is also proposed at Los Alamos. Yet, in both EA's, the DOE states that it has no BSL-3 facility, omitting mention that the agency is planning multiple facilities. In fact, DOE is moving forward with an integrated, new program area -- researching bio-warfare agents. It is essential that a Programmatic EIS be prepared to adequately review the programmatic, cumulative and integrated effects of undertaking this new mission area. Further, a full analysis of alternatives, which is central to a PEIS, is absent from the draft EA.

Problems with Siting a BSL-3 at a Nuclear Weapons Design Lab
Livermore Lab claims that the proposed 1,500 square foot building housing 3 laboratories, including small animal experiments, would be used for defensive bio-research. However, the draft EA states that the Livermore BSL-3 facility would, among other things, "... produce small amounts of biological material (enzymes, DNA, ribonucleic acid [RNA], etc.) using infectious agents and genetically modified agents..."

Livermore Lab's central mission for the past 50 years has been the development of nuclear weapons of mass destruction. The processes involved in conducting the research outlined in the draft EA -- and results of this type of research (genetically modified bio-warfare agents, aerosolized agents, etc.) -- in theory could be used either offensively or defensively. How will DOE convince the world that this new work with bio-agents is strictly defensive? This is an important question that must be addressed before DOE moves ahead with BSL-3 facilities, yet the draft EA is silent on this issue.

A higher-level environmental review (i.e., EIS and PEIS) is needed to fully examine this question and to look at alternatives. For example, DOE could better-utilize existing BSL-3 facilities run by the Centers for Disease Control, which has both a civilian mission and a history of operating BSL-3 facilities.

The draft EA speaks of the inconvenience of using other BSL-3 facilities, but fails to analyze methods (e.g., a negotiated memorandum of understanding between agencies) that could mitigate the inconvenience without building a BSL-3 facility at Livermore Lab.

Lack of Modeling for Accidental Release(s)

The draft EA mentions the 1.3 million people living in Alameda County. Yet, in other documents, DOE and LLNL declare the 50-mile radius around the Lab as the affected population, more than 7 million people.

The draft EA lacks any modeling for accidental releases. How might various types of bio-agents be spread? How might infectious diseases be spread if one or more persons or animals are exposed? Shockingly, the draft EA deems public exposure as such a remote possibility that it does not merit analysis. The proximity of workers and density of nearby populations require this analysis be conducted in advance of the decision to construct and operate a BSL-3 facility.

The draft EA states that the proposed facility will have the same worker and illness rate as the US Army Biological Defense Research Program (BDPR) and laboratories and the existing (BSL-2) biological research labs operated by LLNL.

BDPR has a long history of operating a BSL-3 facility. Neither DOE nor LLNL has this experience, making the analogy ill footed. Additionally, to claim that the safety records for a BSL-2 and BSL-3 facility will be the same, grossly underestimates the huge leap between BSL-2 and 3 facilities (e.g., a flu virus in a BSL-2 vs. up to a liter of live anthrax in a BSL-3). The safety measures and procedures for the BSL-2 and BSL-3 facilities are vastly different, as are the risks. Therefore, substituting analogy for analysis -- as this draft EA does consistently -- is inappropriate.

Risks in Aerosolizing Bio-warfare Agents; Using Liter-level Quantities

The LLNL BSL-3 facility proposes to aerosolize bio-agents. This could substantially increase the risk of release and exposure. In addition, the EA states that LLNL may work with up to 1 liter at a time of a given pathogen. No reason for using these quantities was given in the draft EA. What are the requirements of a defensive bio-program that would require the use of more than gram or milligram quantities of an individual agent at a time?

Waste Water Risks

According to the draft EA, the proposed facility will produce 10,000 gallons of wastewater that will flow into the city sewage. Currently, no discharge limits exist for infectious materials. Further, the EA does not adequately describe any monitoring system for the wastewater. How will LLNL know for certain in advance that microorganisms are not being accidentally released? Will an alarm sound locally in the lab? How will LLNL stop discharge of water on site if microorganisms are being accidentally released into the city sewage treatment?

The LLNL record on inadvertent releases to the sewer system is long and frightening. Toxic metals have been released, as have numerous radionuclides and other hazardous materials. A more thorough analysis of possible accidents and mitigation measures must be undertaken before proceeding with the BSL-3.

Air Pollution Risks

The EA proposes that double HEPA filters will be used to prevent exposures via airborne pathways. LLNL has a record of negligence with regard to its HEPA filters in the plutonium facility and other key buildings. In the plutonium facility, for example, LLNL has left HEPA filters in place for up to 30 years. HEPA filters become more fragile and brittle with age.

Further, the draft EA makes claims for the protective qualities of HEPA filters that exceed the documented record. According to the reports from multiple DOE-sponsored conferences on HEPA air filtration, HEPA filters have a "valley" in their capture efficiency in the .1 micron range; specifically DOE reports state that the efficiency of HEPAs for capture of particles in the .1 micron size range is less than the efficiency for the .3 micron-sized particles. Therefore, the statement in the draft EA that the capture efficiency for .3 microns is 99.97%, and that the capture efficiency for all other particle sizes is "virtually 100%" (page 51) is optimistic at best.

A more complete analysis of the potential for HEPA filter failure and other related HEPA efficiency issues is required before moving ahead with this facility. Moreover, a more comprehensive assessment of the overall potential for airborne release is clearly needed as well.

Solid Waste Issues

According to the draft EA, solid waste may be disposed of in a landfill, instead of first undergoing treatment at a commercial, off-site facility. Is disposal of the waste in the Altamont dump a consideration? Other area landfills? The BSL-3 facility is expected to generate 1,144 - 2,000 pounds of solid waste annually. By what analytical method(s) will the Lab ensure that hazardous and infectious agents aren't in any of those thousands of pounds of waste? The draft EA does not adequately describe detection methods -- or contingency measures.

Security Risks

The draft EA does not adequately address security issues, externally or internally. In fact, no security analysis is included in the draft document. What is the potential for unauthorized access? For attack (e.g., from an LLNL staff, a subcontractor, a visitor [delivery personnel, for example] or outsider(s))? What is the potential for unauthorized removal of a select portion of bio-agent by a BSL-3 worker or other person? Clearly, the type of security in place will impact the potential for a deliberate release of bio-agents and thus the risk to surrounding communities.

The recent Anthrax attacks in the U.S. mail are often cited as the reason or needing this type of facility to "counter bioterrorism", yet the draft EA does not address the possibility of a terrorist attack. This is a genuine risk, and it needs to be analyzed carefully -- as it includes the potential for direct risk to the more than 7 million people living in a 50 mile radius of the facility.

Earthquake and Other Natural Disaster Risks

The draft EA lacks a comprehensive analysis of earthquakes. The document states that the BSL-3 facility will not be built on a crack. True enough, but what of the active earthquake faults in the vicinity, including the Las

Positas fault zone, located less than 200 feet from the LLNL boundary. What about the Greenville fault, considered inactive until it initiated a 5.5 quake in 1980, causing a reported $44 million in damages at LLNL? Moreover, a number of regional faults from the Hayward to the San Andreas are capable of causing damage at LLNL. A comprehensive earthquake analysis should include the potential for cracks to open up on the LLNL site as well as looking at shaking. Moreover, the fate of equipment inside the BSL-3 facility needs to be assessed in addition to the building.

Similarly, the draft EA gives equally short shrift to any analysis of other natural disasters. There are sweeping statements in the draft EA that quakes, fires and other natural disasters may effectively kill airborne agents. While this may be true in many cases, there is no assessment in the document to show that it would be true in all cases. In fact, some bio-agents allowable in a BSL-3 facility may prove quite hardy and adept at surviving in the outside environment. This is one reason these agents are considered potential bio-warfare agents. A much more careful analysis of release possibilities and outcomes than is contained in the draft EA (virtually zero) is called for.

Conclusion

Constructing and operating a BSL-3 facility represents a new direction and program for DOE and LLNL; one that could have serious health and environmental consequences. Therefore, this proposal to create a BSL-3 facility at LLNL merits both a programmatic and project specific EIS. It is in the context of a full environmental review that the specific questions I have raised (and others) could best be answered.

Thank you for the opportunity to comment on the draft Environmental Assessment. Please inform me in writing of any decisions DOE makes regarding the BSL-3 facility at LLNL and its environmental review process.

Sincerely,

Name:

Address:

Marylia Kelley
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<<http://www.trivalleycares.org>http://www.trivalleycares.org> - is our new web site address. Please visit us there!

(925) 443-7148 - is our phone
(925) 443-0177 - is our fax

Working for peace, justice and a healthy environment since 1983, Tri-Valley CAREs has been a member of the nation-wide Alliance for Nuclear Accountability in the U.S. since 1989, and is a co-founding member of the Abolition 2000 global network for the elimination of nuclear weapons, the

U.S. Network to Abolish Nuclear Weapons and the Back >From the Brink campaign to get nuclear weapons taken off hair-trigger alert.

nuclear watch new mexico

August 19, 2002

Mr. Richard Mortensen
DOE NEPA Document Manager
U.S. Department of Energy
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Mail Stop L-293
PO Box 808
Livermore, CA 94551-0808
rich.mortensen@oak.doe.gov

Via email

Dear Mr. Mortensen,

I am writing to you to ask that you extend the comment period for the "Draft Environmental Assessment for the Proposed Construction and Operation of a Biosafety Level 3 Facility at Lawrence Livermore National Laboratory, Livermore, California, DOE/EA-1442." As your are aware, the comment period for this Environmental Assessment (EA) is slated to end August 23, 2002. Being mindful of the intent of the National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) regulations, as well as DOE's own implementing regulations, it would be in the best interest of the Agency and the public to provide the greatest possible opportunity for discourse on the proposed facility. The NEPA process is designed to provide Agencies a path for sound policy and planning decisions. It has been my experience that public input through this process has greatly aided Agencies to make wise decisions.

Though I recognize that DOE is not obligated by law to provide an extended comment period on the Draft EA, the significance of the proposed action and the great potential for public concern as a result of the unprecedented nature of the action make this a reasonable request. Furthermore, DOE did extend the comment period on the Draft EA for the proposed BSL-3 at Los Alamos National Laboratory when they realized that more time was required to discuss the proposed action. An extension of the comment period by 10-15 days could be considered reasonable.

I appreciate your consideration of this matter.

Sincerely,

Colin King
Research Director

>-----Original Message-----
>From: lacroixdn@netscape.net [mailto:lacroixdn@netscape.net]
>Sent: Friday, July 26, 2002 9:30 AM
>To: rich.mortensen@oak.doe.gov
>Subject: Pathogen facility
>
>We are opposed to the pathogen facility in Livermore. It would present a
>danger to our community and citizens. We have always been strong supporters
>of the Lab since we moved here 17 years ago. We are prepared to fight this
>and rally our friends and neighbors to prevent it.
>
>Cliff&Diann LaCroix
>2094 Vintage Lane
>Livermore, Ca 94550

WESTERN STATES LEGAL FOUNDATION
1304 FRANKLIN STREET, SUITE #202 • OAKLAND, CA 94612
PHONE (510)839-5877 • FAX (510)839-5397
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8/20/02: CALLED ANDREW LICHTERMAN ACKNOWLEDGING RECEIPT OF FAX.

8/21/02: CALLED AND LEFT A VM FOR ANDREW LICHTERMAN INFORMING HIM OF THE EXTENSION TO 9/7.

August 20, 2002

Mr. Richard Mortensen
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BY FAX

Dear Mr. Mortensen:

Western States Legal Foundation is a nonprofit organization that for almost two decades has monitored the impacts of the Lawrence Livermore National Laboratory and other Department of Energy weapons research facilities. We request that the comment period for the Draft Environmental Assessment for the Proposed Construction and Operation of a Biosafety Level 3 Facility at Lawrence Livermore National Laboratory (DOE/EA-1442) be extended for a period of no less than thirty days. In addition, the EA did not include information regarding the appropriate point of contact for comments. Before the new comment period begins, a new notice for the availability of the EA and for the new comment period, including the point of contact to which comments should be sent should be circulated via the Federal Register, to all public agencies, organizations, and interested individuals to which the EA was circulated, and by adding the information on the point of contact and new deadline for comments to copies of the EA in DOE reading rooms.

This Environmental Assessment (EA) raises issues that are complex and technical in nature. The proposed action would make possible a significant expansion of LLNL on-site activities relevant to biological warfare defense, and as such raises new issues, including both a new set of hazards and their potential cumulative and synergistic impacts in combination with the wide variety of hazardous activities already present at the laboratory. The new facility is being built at a time when new missions in this area of research for LLNL may be defined under the proposed Department of Homeland Security. In addition, this EA is being circulated for comment during the scoping comment period for the Site Wide Environmental Impact Statement for LLNL. This creates a significant burden on community groups and agencies with limited staff resources, and raises additional issues requiring analysis concerning the appropriate relationship between these two environmental reviews.

We believe that public comment is vital to the NEPA process, and helps produce NEPA documents that are more informative and useful to the public and to decision makers. Please inform us of your decision regarding this matter as soon as possible.

Sincerely,

Andrew M. Lichterman

Western States Legal Foundation Comments on the Environmental Assessment for the Biosafety Level 3 Laboratory at Lawrence Livermore National Laboratory.

Submitted by Andrew Lichterman, Program Director

Summary

Western States Legal Foundation (WSLF) is a nonprofit organization that provides information, analysis, and legal support for peace and environmental activists. WSLF has monitored the activities of the Lawrence Livermore National Laboratory (LLNL) for twenty years, and has worked on broader Department of Energy weapons complex issues for approximately fifteen years.

WSLF believes that the construction of a Biosafety Level 3 (BSL- 3) laboratory at LLNL requires an Environmental Impact Statement. The proposed action, which will include research using significant quantities of dangerous organisms and the aerosolization of pathogens and biotoxins for various purposes including animal exposure tests, has significant foreseeable environmental impacts. The potential health risks, although perhaps difficult to quantify, are substantial. Because of the particular nature of biological warfare research, a known or suspected release may have disproportionately large direct economic and social impacts. The Environmental Assessment here provides only boilerplate assertions that the risks are negligible, and relies on adherence to procedures, some of which DOE laboratories have not followed in the past and others of which are not yet in place, for risk reduction. Because of the significance of the potential impacts, WSLF believes that an Environmental Impact Statement (EIS) is required here.

Because of the intrinsic risks of placing a laboratory that will handle dangerous biological materials in a densely populated urban area, a careful analysis of alternatives is both essential and required. The Environmental Assessment addresses in detail only various ways to construct a BSL- 3 facility at the Livermore Laboratory, without comparing in detail any of the other possibilities for accomplishing the same mission, ranging from using other existing government or contract facilities, using government facilities slated to be constructed in the near future, or constructing a new BSL 3 facility at another Department of Energy (DOE) site. These issues would be addressed in detail the more extensive analysis required in an EIS.

Adequate environmental review for this action, furthermore, would best be assured by preparing a Programmatic Environmental Impact Statement (PEIS) for the DOE Chemical and Biological National Security Program (CBNP) prior to site-specific environmental review. This would best allow comparison of both alternative means for fulfilling the purposes of the action, i.e. conducting various kinds of non-medical biological warfare defense research, (including, for example, use of contract laboratories), and alternative sites for a new BSL- 3 laboratory if it is determined that one is needed. In addition, this would allow more systematic consideration of reasonable alternatives not under the direct jurisdiction of the agency, such as conducting research requiring BSL- 3 facilities at Department of Defense or other government facilities doing similar work. A PEIS also would help to inform a broader assessment and discussion of responses to the risk of biological attack, including whether resources are best used on

biowarfare defense technologies as opposed to such other responses as improvements in overstretched emergency medical resources and existing public health systems for reporting, tracking, and responding to disease outbreaks.

Finally, the Programmatic NEPA review of DOE's biological warfare defense research should be accompanied by a Nonproliferation Impact Review. The potential for the development of offensive technologies intrinsic to "defensive" biowarfare research raises dangers of diffusion of technology, disruption of global nonproliferation efforts due to perceptions of a potential offensive threat from growing U.S. technical capabilities, and theft or diversion of dangerous materials.

The Environmental Assessment does not provide an alternatives analysis sufficient to allow meaningful comparison of the proposed action with other reasonable alternatives.

The discussion of alternatives here is deficient even for an Environmental Assessment. DOE has dismissed alternatives other than "No Action" and construction of a BSL- 3 laboratory at LLNL from the outset by defining the "purpose and need" for the action as "the purpose and need for NNSA to conduct future BSL-3 level work at LLNL in support of its assigned national NNSA security –and science mission responsibilities." EA at 26.

The EA claims that a BSL-3 facility must be built at LLNL. According to the EA, DOE is constructing another BSL- 3 laboratory at the Los Alamos National Laboratory. It also appears that DOE is constructing a facility that could be used for BSL- 3 work at the Oak Ridge National Laboratory, although the EA fails to mention it.[1] These would seem to provide alternative sites for the BSL-3 activities contemplated for LLNL.. DOE acknowledges that "it is possible to construct such a facility at any of the national security laboratories at approximately the same cost and schedule,"(EA at 26) but rules out any other options because they fail to meet DOE's self-fulfilling requirement of "need for NNSA to conduct future BSL-3 Level work at LLNL." The primary rationale for limiting alternatives to LLNL on-site construction of the BSL-3 laboratory appears to be that LLNL has supporting infrastructure, past program experience, and expertise that make it an appropriate site for the required work. EA at pp. 4-7. It is worthy of note in this connection that when conducting its NEPA analysis for the National Ignition Facility, an advanced laser facility, DOE considered a wide variety of sites, despite the fact that LLNL arguably has a far greater claim to the unique character of its laser programs and supporting infrastructure than can be made here for its biological research programs.[2]

[1] According to a February 2001 DOE Inspector General Report, DOE constructed a laboratory at Oak Ridge National Laboratory intended for BSL-3 work, but failed to do an environmental assessment. According to the Inspector General report, "Oak Ridge Operations Office officials subsequently placed restrictions on the Chem-Bio Facility to exclude BSL-3 activities, and stated they will conduct an environmental assessment before any BSL-3 work is performed in the facility." "Investigation of Department of Energy Activities Involving Biological Select Agents," DOE/IG-0492, February 2001, p.23

[2] The National Ignition Facility environmental review considered sites at three DOE laboratories, and the Nevada Test Site. See U.S. Department of Energy, Final Programmatic

Further, DOE's work in this area is by no means unique. The General Accounting Office in 2000 found a lack of coordination and potential duplication of effort in federal non-medical chemical and biological research, including DOE's Chemical and Biological Nonproliferation Program (apparently the forerunner of the current Chemical and Biological National Security Program). GAO

> found many similarities among these programs in terms of the research and development activities they engage in, the threats they intend to address, the types of capabilities they seek to develop, the technologies they pursue in developing those capabilities, and the organizations they use to conduct the work. "Chemical and Biological Defense, Observations on Nonmedical Chemical and Biological R&D Programs," Statement of Kwai-Cheung Chan, Director, Special Studies and Evaluations, National Security and International Affairs Division, U.S. General Accounting Office, Before the Subcommittee on National Security, Veterans' Affairs, and International Relations, Committee on Government Reform, House of Representatives, March 22, 2000, GAO/NSIAD-00-130, p.2. (Hereafter GAO 2000)

This also would suggest that there are reasonable alternatives to conducting CBNP program research requiring a BSL-III at DOE facilities, and at LLNL in particular. Given the risks of conducting the types of research characteristic of a BSL-3 facility, and particularly such activities as the aerosolization of pathogens and biotoxins, possibly in forms that could be used as biological weapons, an alternatives analysis must be conducted that is sufficiently broad to inform choices on whether a new BSL-3 facility is needed at all, and if so whether a particular location is most appropriate.

DOE should prepare a Programmatic EIS for its Chemical and Biological National Security Program and for similar and related work performed at its facilities.

As the above GAO report makes clear, the work performed by the DOE CBNP program is closely related to that being done by several other agencies, particularly within the Department of Defense (DoD). That report also noted that funding for chemical and biological warfare defense research is increasing rapidly, and that there is a danger that resources will be wasted due to inadequate coordination of programs proceeding simultaneously in different agencies.[3]

Environmental Impact Statement for Stockpile Stewardship and Management, 1996, V.III, pp. I-S2-IS3.

[3] Although the four programs we examined currently use both formal and informal mechanisms for coordination, we found several problems that may hamper their coordination efforts. First, we found that participation in current coordination mechanisms, whether formal or informal, is inconsistent. Second, program officials cited a lack of comprehensive information on which chemical and biological threats to the civilian population are the most important and on what capabilities for addressing threats are most needed. More detailed information could help guide and coordinate R&D. Third, several programs do not formally incorporate existing information on chemical and biological threats or needed capabilities in deciding which R&D projects to

This was before September 11, and budgets for research of this kind continue to increase rapidly. A useful alternatives analysis for the type of work proposed in the action reviewed here– to "'develop, demonstrate and deliver technologies and systems to improve domestic defense capabilities and, ultimately, to save lives in the event of a chemical or biological attack'" (EA at 7)-- could best be performed as part of a Programmatic Environmental Impact Statement. (PEIS). A PEIS would allow comparison of both alternative means for fulfilling the purposes of the action, i.e. conducting various kinds of non-medical biological warfare defense research, (including, for example, use of contract laboratories), and alternative sites for a new BSL- 3 laboratory if it is determined that one is needed. In addition, this would allow more systematic consideration of reasonable alternatives not under the direct jurisdiction of the agency, such as conducting research requiring BSL-3 facilities at Department of Defense or other government facilities doing similar work. In this regard, it is noteworthy that the Department of the Army is preparing a PEIS for the Department of Defense Chemical and Biological Research Program.[4]

A PEIS also would help to inform a broader assessment and discussion of responses to the risk of biological attack, including whether resources are best used on biowarfare defense technologies as opposed to such other responses as improvements in overstretched emergency medical resources and existing public health systems for reporting, tracking, and responding to disease outbreaks. The current martial atmosphere, with its emphasis on military and technological solutions, may prevent adequate attention to other approaches that may actually be more effective in protecting the public, and is likely to strengthen tendencies to provide funding with little question to military and other weapons research laboratories for research that may be less useful.[5]

In addition, the DOE Inspector General has identified a variety of operational issues that are common to DOE facilities doing biological warfare defense work, and that are likely to pose greater hazards if the volume of work increases and if more dangerous agents are used:

> We concluded that there was insufficient organization, coordination, and direction in the Department's biological select agent activities. Specifically, the Department's activities lacked sufficient Federal oversight, consistent policy, and standardized implementing procedures, resulting in the potential for greater risk to workers and possibly others from

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fund. Because of these problems, these programs may not be developing the most important capabilities or addressing the highest priority threats. GAO 2000, p.9

[4] See Department of Defense, Department of the Army, Notice of Intent, Preparation of a Programmatic Environmental Impact Statement (PEIS) on the Chemical and Biological Defense Program, Federal Register: June 4, 2001, (Volume 66, Number 107) pp. 29935-29936

[5] On this point, see generally Victor W. Sidel, M.D.; Robert M. Gould, M.D.; Hillel W. Cohen, Dr.Ph., "Bioterrorism Preparedness: Cooptation of Public Health?" *Medicine and Global Survival,* v.7 no.2, February 2002, pp.82-89. (Herafter Sidel 2002) As Sidel and his co-authors note, "In a world of finite resources, it is impossible to adequately prepare for all "what-if" catastrophic scenarios. What is needed is a thorough, objective, and scientific analysis of probabilities and alternatives that would guide the setting of priorities for programs to defend populations at risk."

> exposure to biological select agents and select agent materials maintained by the Department. "Investigation of Department of Energy Activities Involving Biological Select Agents," DOE/IG-0492, February 2001, p.2

The Inspector General recommended that DOE

> 1. Identify the types and locations of activities being conducted by the Department involving biological select agents and select agent materials.
>
> 2. Initiate actions to ensure: (a) appropriate federal oversight; (b) consistency in policy; and (c) standardization of implementing procedures for biological select agent activities being conducted by the Department. Actions, for example, could include encouraging more interagency cooperation in this area and, similar to the approach taken by the United States Army, supplementing CDC [Centers for Disease Control and Prevention] guidance regarding activities involving biological select agents and select agent materials to address situations unique to DOE.
>
> 3. Ensure that required NEPA reviews are conducted prior to the start of biological select agents and select agent materials and revised, as needed, when significant changes occur in the activities
>
> .
>
> 4. Initiate appropriate action to ensure the Department's laboratories, including those managed by the NNSA, receive timely and consistent information regarding CDC guidelines." "Investigation of Department of Energy Activities Involving Biological Select Agents," DOE/IG-0492, February 2001, p.25

These issues are particularly noteworthy given the types of activities proposed in this EA, and for the DOE Chemical and Biological National Security Program in general. As the Inspector General report noted, "activities by DOE laboratories, including those managed by the NNSA, are beginning to involve infectious (potentially lethal) forms of biological select agents that pose a greater risk to employees." at 4. The list in the environmental assessment of organisms to be used is very open ended, with the EA stating that organisms could include "other bacterial or viral infectious organisms not specifically or currently regulated by CDC or other Federal agencies such as those shown in the tables at the end of Appendix A," (EA at Appendix A, p.22)-- a list including hundreds of organisms. The EA also notes that "[i]t is possible that the facility would receive genetically altered microorganisms."Appendix A, p.17.

Both the operational and management issues and the increase in lethality of the agents being studied are issues that apply across DOE's Chemical and Biological National Security Program. The use of genetically modified organisms poses particular problems that are not specific to any one facility. The problems identified by the Inspector General may be exacerbated by the management changes that may come with the establishment of a Department of Homeland Security, which may change lines of authority yet again in institutions where unclear responsibility and lax oversight has been a chronic problem. The DOE CBNP is clearly a "program" responsible for a discrete set of interconnected activities with similar environmental risks and impacts at a number of different locations, and common operational and management

issues. For all of these reasons, DOE should prepare a PEIS for this program. Scoping for this PEIS could examine what other DOE biological research activities (e.g. similar or related "work for others" programs) should be included.

DOE should conduct a Nonproliferation Impact Review for its Chemical and Biological National Security Program

The Programmatic NEPA review of DOE's biological warfare defense research should be accompanied by a Nonproliferation Impact Review. Such a review is not unprecedented, having been conducted in the past by DOE for the National Ignition Facility to assess the effects of a new advanced nuclear weapons research facility on the nuclear nonproliferation regime. The potential for the development of offensive technologies intrinsic to "defensive" biowarfare research raises dangers of diffusion of technology, disruption of global nonproliferation efforts due to perceptions of a potential offensive threat from growing U.S. technical capabilities, and theft or diversion of dangerous materials. The risk that techniques or agents will be developed that have offensive applications is significant where "defensive" research weaponizes organisms or biological toxins to test defensive technologies to develop medical responses such as vaccines.

The Nonproliferation Impact Review should be similar in form to a NEPA proceeding, with an opportunity for the public to participate in scoping, and a draft circulated for public comment. If biowarfare defense research must be conducted, keeping secrecy to a minimum is critical to reduce both perceptions and the real possibility that "defensive" programs will be used to develop technologies with offensive capabilities. A review of this kind would allow the civilian medical, scientific, public health, and arms control communities, as well as the general public, to make suggestions for how such research could be conducted in the most open possible manner and how unnecessarily dangerous or provocative activities could be avoided.

DEFICIENCIES IN THE IMPACTS ANALYSIS IN THE ENVIRONMENTAL ASSESSMENT

In general, the EA assumes that a significant release of pathogens or biological toxins from the proposed facility is an event too unlikely to require detailed analysis. The EA presumes that a the most hazardous conceivable release would require a structural breach in the facility, and even then that the potential hazard is insignificant. The pathway of worker exposure, and of subsequent transmission to other LLNL workers or to people off-site, also is dismissed as insignificant. These conclusions are based, however, on a number of assumptions that are questionable. In particular, we believe that the risks of worker exposure are understated, as are risks of subsequent transmission of illness to other workers or people off-site.

The CEQ NEPA regulations list elements to be taken into account in determining whether an environmental impact is "significant" for the purposes of determining whether an EIS should be prepared. Factors of particular relevance here include:

"The degree to which the proposed action affects public health or safety....

> The degree to which the effects on the quality of the human environment are likely to be highly controversial.
>
> The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.... 40 C.F.R. § 1508.27

Here, the nature of the proposed action is inextricably related to "public health and safety." The EA states that the proposed facility may handle a wide range of dangerous organisms and biotoxins, including genetically engineered organisms. Some of these materials will be aerosolized in the course of doing the research. The research is on defense against biological weapons, so it appears possible that some of these materials will be in weaponized form. The EA states that work at the facility will include aerosolization of materials for animal inhalation tests, which means that the material will be reduced to small, easily respirable particles in quantities sufficient to cause disease in the test animals. This work is inherently dangerous, and unless done with a high level of physical and procedural safeguards appears likely to pose a high level of hazard to both workers and the public.

Both the likelihood of exposure of workers or the public are " highly uncertain"and "involve unique or unknown risks." The uncertainty comes form the difficulty of assessing the risk that facility workers, other LLNL personnel, or people off-site will be harmed as a consequence of a release or a worker exposure. The EA's conclusions that this risk is insignificant are based on a number of questionable assumptions about the reliability of both physical and procedural safeguards, the specifics of which we will return to below. The "unique or unknown risks" element results from the purposes of the proposed facility and the work that may be performed there. Biological warfare agents are seldom encountered by the general public, or by emergency personnel and regional medical workers who would have to respond if there were a substantial disease outbreak as a result of the proposed activities. Since they in most cases have not been tested on human subjects, the consequences of exposure of a human population may be only theoretically grounded, and not proven. Genetically modified organisms pose a particular problem in this regard. It is worth noting here that an EIS also would provide an opportunity for more extensive participation in the impact analysis by state and local agencies concerned with emergency services and medical response, which both will improve the quality of the analysis and help to provide responders with an understanding of the risks posed by the proposed activities.

The effects on human health and the environment of the kinds of research here are without doubt controversial. There is extensive debate over the degree of risk presented by research of this kind, and particularly by research in which genetically modified organisms are used and may be accidentally released.

Finally, a particular characteristic of biological warfare research that the EA fails to address is the peculiarly terrifying nature of biological warfare agents themselves. If there were a release or exposure at such a facility, it might be difficult for some time to determine the nature or extent of the hazard. As was demonstrated by the anthrax attacks of Fall 2001, even the possibility of small quantities of dangerous organisms can close down entire facilities, or change

the way that a region– or even an entire country– functions, despite the fact that only a relatively small number of people actually become ill or die.

Particular deficiencies in the Impact Analysis

The analysis of the risk that workers may be exposed to dangerous organisms or toxins, and of the possibility that this may lead to transmission of disease to other workers or off-site, rests on a number of assumptions. These include:

--Procedures for handling of biohazard materials will be consistently followed.

Much of the analysis is devoted to listing the procedures that will be followed by laboratory personnel to assure that materials are properly tracked, handled, and disposed of. The EA also relies heavily on the 1989 Final Programmatic Environmental Impact Statement for its Biological Defense Research Program. There is no explanation for why we should believe that the safety culture at the Army laboratories is the same as that at the Department of Energy, whose past record of adherence to health and safety procedures has not been good. Again, as the DOE Inspector General noted in regard to the type of activity at issue here,

> the Department's activities lacked sufficient Federal oversight, consistent policy, and standardized implementing procedures, resulting in the potential for greater risk to workers and possibly others from exposure to biological select agents and select agent materials maintained by the Department. "Investigation of Department of Energy Activities Involving Biological Select Agents," DOE/IG-0492, February 2001, p.2

--Physical safeguards, and particularly HEPA filter systems, will function well.

The Department of Energy has a long history of difficulty with HEPA filters at its facilities. Two recent reports by the Defense Nuclear Facilities Safety Board document DOE nuclear weapons complex-wide problems with confinement ventilation systems, and particularly with HEPA filters. These problems are not limited to existing or older facilities, since they concern a wide range of issues including problems with safety analyses, filter design, behavior of filter and ventilation systems under fire and other accident conditions, and filter production quality control. See Defense Nuclear Facilities Safety Board Technical Report, "HEPA Filters Used in the Department of Energy's Hazardous Facilities," DNFSB Tech-23, May 1999, and Defense Nuclear Facilities Safety Board Technical Report, "Improving Operation and Performance of Confinement Ventilation Systems at Hazardous Facilities of the Department of Energy," DNFSB/Tech-26, February 2000.

These reports addressed DOE nuclear facilities; the EA, however, fails to address why, given the systemic nature of the problems, things would be any better at a BSL-3 facility.

-- Even if workers are exposed, they are unlikely to become ill because they will be immunized, and even if they get sick, the risk of a widespread outbreak is small because of the nature of the organisms and toxins handled at a BSL-3 facility:

> "Even though these accidents are more frequently reported, they rarely result in workers actually contracting diseases due to the use of vaccines and drug therapies." EA at 48.
>
> "The worker(s) would have the appropriate prophylaxis available or immunization prior to working in the laboratory and would not become symptomatic." EA at 51
>
> "Last, but not least, Risk Group 3 agents (those handled in BSL-3 laboratories) are associated with serious or lethal human diseases for which preventative or therapeutic intervention may be available (high individual risk but low community risk). EA at 51.

These assumptions are problematic. The first assumes that there would be "prophylaxis or immunization available" for all pathogens handled. This seems questionable in a laboratory that may handle an open-ended array of biological warfare agents, particularly for example that "immunizations" will be available for genetically altered agents. It also implies that all workers would be immunized. This seemed dubious enough to the DOE Inspector General to recommend that the DOE General Counsel

> 5. Determine the potential liability to the Department if contractor employees working with biological select agents refuse immunizations or if they do not sign a statement acknowledging the risks associated with the project, the availability of immunizations, and the individual's decision not to be immunized.
>
> 6. Determine the feasibility of requiring Department laboratory employees to be immunized in order to work with infectious agents.
>
> 7. Determine whether the Department has liability to third parties (e.g., spouses, families, members of the community) who may be infected as a result of coming in contact with a laboratory employee who works with biological select agents, but has refused to be immunized. "Investigation of Department of Energy Activities Involving Biological Select Agents," DOE/IG-0492, February 2001, p. 25.

The latter assumption, that "preventative or therapeutic intervention may be available," also seems weak for a biowarfare defense lab that may employ genetically altered organisms. There also is an implication that this will be sufficient to contain an outbreak at 'acceptable' levels, whatever that may be.

These assumptions, drawn from a long list of assumptions cited as support for the "conservatism" of the EA's limit case accident analysis, are important because they are key underpinnings of the EA's broader assumption that workers will not get sick in the ordinary scheme of things, and if they do it they are unlikely to infect many others on or off-site. Here too the EA relies heavily on the 1989 Army PEIS (see generally EA Appendix B). Again, it is worth noting the relevance of DOE's past difficulties with health and safety regulation compliance (not addressed in the EA). And worker exposures do happen:

> [A] researcher at the US Army Medical Research Institute of Infectious Diseases (USAMRID) developed a case of glanders, a disease considered to have biowarfare

potential. The researcher spent considerable time in his community before the diagnosis was made. Sidel 2002, citing Srinivasan A, Kraus CN, DeShazer D, et al., "Glanders in a military research microbiologist, " N Engl J Med 2001;345:256-8.

Another unanswered question relevant to DOE's reliance on past data from military labs is the relative risk of different types of research activities. Aerosolization studies that may include biowarfare agents would seem to be a fairly high-risk activity, and there is no indication of what proportion of the labs whose experience provided the data for the studies relied on by the EA did work posing similar or greater hazards.

The EA does note that "[o]nly by prior approval of the LLNL Institutional Biosafety Committee (IBC), and after a risk analysis is conducted, would any infectious agent be considered for use in the proposed laboratories." Appendix A p.22. But this promise of a future procedure, with no guarantee of public participation, is no substitute for adequate environmental review before the facility is built.

There are other flaws in the EA's analysis both of a bounding accident and of possible worker exposures from far smaller mishaps in routine operations. Both the bounding accident discussion and Appendix B, which addresses the issue of worker exposure during operations, appear to assume that agents only could be aerosolized at the proposed facility by accident– a centrifuge accident in the case of the accident analysis, and various other laboratory errors or incidental releases in the Appendix (see Appendix B-4). One of the activities proposed for the facility, however, is aerosolization of agents, including aerosolization for animal experiments.

"The proposed facility would have the unique capability within DOE/NNSA to perform aerosol studies to include challenges of rodents using infectious agents or biologically derived toxins (biotoxins)." EA at ii.

It would seem possible that this process would produce more efficiently aerosolized particles, possibly even in larger quantities, that the scenarios posited by the EA. The possibilities of other accidents– earthquakes, facility fires, etc.-- seems more likely during the routine, intended process of aerosolizing agents than the unlikely string of events the EA claims as the bounding accident. In addition, the possibility of failure of filter systems, both within the facility and leading outside, during aerosolization of agents is not addressed. This failure could be partial or complete, and could, depending on circumstances, go unnoticed at the time. Filters that are not functioning properly on a routine basis, and possible consequences, also are not addressed. These possibilities would seem to pose a risk of worker exposure, particularly given if DOE's past systemic problems with HEPA filters have not been fully remedied, and also of further disease spread, and should be analyzed.

Other questions and areas where past practices suggest caution

–Disposal of liquid waste.

The EA states that "Soluble or liquid waste materials generated from laboratory operations can be disposed in the laboratory sinks after first being treated with disinfectants."

p.23 It is unclear from the EA whether this waste will be discharged directly to the sanitary sewer or first to retention tanks. The EA states at page 34 that these wastes will first go to retention tanks, but at p.45 it states in connection with hazardous wastes that "There would be no retention tanks or need for waste accumulation areas since no hazardous waste would be produced (hazardous chemicals would be used up in process or leave the building as a stabilizing product for microorganisms and biological material)." Presumably this applies only to hazardous wastes, and there will be retention tanks for other liquid waste.

Discharge of improperly characterized retention tanks to the sewer system has been a problem in the past at LLNL with hazardous and radioactive wastes. This too is an area that requires further analysis, since a discharge of toxins or pathogens to the sewer system is a possibility. Sewage sludge should be analyzed as a possible transmission route for organisms discharged to the sewer.

-----Original Message-----
From: Joan M. MacIntyre [mailto:jmmmmac@pacbell.net]
Sent: Friday, September 06, 2002 3:07 PM
To: rich.mortensen@oak.doe.gov
Subject: Re: BSL-3 facility at LLNL

September 6, 2002

Dear Mr. Mortensen:

**Here are my concerns about the Environmental Assessment (DOE/EA-1442) for
the construction and operation of a Biosafety Level 3 (BSL-3) facility at the Department of Energy's (DOE) Lawrence Livermore National Laboratory
(LLNL).**

Constructing and operating a BSL-3 facility represents a new direction and program for DOE and LLNL; one that could have serious health and environmental consequences. Therefore, this proposal to create a BSL-3 facility at LLNL merits both a programmatic and project specific EIS.

**The Livermore Lab has a history of leaks, spills, fires, explosions and accidents. In recent years, these have included, but are not limited to, a chlorine gas leak that forced an evacuation, a filter shredding accident that contaminated workers with curium, numerous inadvertent releases to the
sanitary sewer and an explosion that sent one employee to the hospital. Radioactive and toxic contaminants have found their way from DOE operations
at LLNL into the air, groundwater and soil on-site and off-site, and have jeopardized the health of workers and surrounding communities.
And you propose working with bio-toxins and biological agents including anthrax, bubonic plague, botulism, small pox and even genetically modified lethal bio-warfare agents.**

Experimenting with these kinds of agents and claiming that all the work is defensive and none of it offensive will be a hard sell internationally as well as nationally.

Please rethink this idea.

Sincerely

Joan and Stuart MacIntyre

478 Jean St.

Oakland CA 94610 510 451 2712

Joan MacIntyre
Oakland CA

NRDC
THE EARTH'S BEST DEFENSE

NATURAL RESOURCES DEFENSE COUNCIL

8/20/02 — CALLED DR. MCKINZIE TO ACKNOWLEDGE RECEIPT OF FAX.

August 19, 2002

Mr. Richard Mortensen
DOE NEPA Document Manager
U.S. Department of Energy
Livermore Site Office
M/S L-293, P.O. Box 808
Livermore, CA 94551-0808
Fax: (925) 423-5650

8/21/02 - CALLED DR. MCKINZIE AND INFORMED HIM OF THE 15 DAY EXTENSION TO 9/7/02.

Dear Mr. Mortensen,

On behalf of the Natural Resources Defense Council (NRDC), we request that the comment period for the draft environmental assessment for a Biosafety Level 3 Facility at Lawrence Livermore National Laboratory (LLNL) be extended an additional 30 days.

Given the many technical issues raised in the draft environmental assessment, the existing 30-day comment period set to expire on August 23, 2002 is an insufficient length of time to provide stakeholders with the opportunity to evaluate the proposed action and formulate comments.

Sincerely,

Matthew G. McKinzie, Ph.D.
Staff Scientist, Nuclear Program

Geoffrey H. Fettus
Staff Attorney, Nuclear Program

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August 19, 2002

Mr. Richard Mortensen
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Via email

Dear Mr. Mortensen,

I am writing to you to ask that you extend the comment period for the "Draft Environmental Assessment for the Proposed Construction and Operation of a Biosafety Level 3 Facility at Lawrence Livermore National Laboratory, Livermore, California, DOE/EA-1442." As your are aware, the comment period for this Environmental Assessment (EA) is slated to end August 23, 2002. Being mindful of the intent of the National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) regulations, as well as DOE's own implementing regulations, it would be in the best interest of the Agency and the public to provide the greatest possible opportunity for discourse on the proposed facility. The NEPA process is designed to provide Agencies a path for sound policy and planning decisions. It has been my experience that public input through this process has greatly aided Agencies to make wise decisions.

Though I recognize that DOE is not obligated by law to provide an extended comment period on the Draft EA, the significance of the proposed action and the great potential for public concern as a result of the unprecedented nature of the action make this a reasonable request. Furthermore, DOE did extend the comment period on the Draft EA for the proposed BSL-3 at Los Alamos National Laboratory when they realized that more time was required to discuss the proposed action. An extension of the comment period by 10-15 days could be considered reasonable.

I appreciate your consideration of this matter.

Sincerely,

Colin King
Research Director

September 7, 2002

To: Rich Mortenson
USDOE Livermore Site Office L-293
P.O. Box 808
Livermore, CA 94551

As a resident of the San Francisco Bay Area for the past 16 years, I have many concerns involving the Department of Energy's proposition regarding the building of a Biosafety Level 3 Facility at Lawrence Livermore Laboratory.

As a student at the University of California at Davis, I am pursuing a Bachelors of Science in Genetics. I am supportive of the research of the extremely harmful pathogens and agents that are classified as BSL-3. I believe that we need to understand them and develop ways to combat them should an outbreak ever occur. I also believe that development of the HANAA and the APDS at LLNL are phenomenal steps in the fight against terrorism. My concern with the pending BSL-3 facility is not the facility itself, but the location and potential use of it.

To start with, I would like to address the issue of a laboratory of this magnitude at a facility known for the manufacture of nuclear weapons. While I understand that DOE and LLNL are trying to expand their biology program to ensure national security, I do not believe building the BSL-3 at LLNL is the answer. LLNL was built in 1952 to help with the country's nuclear weapon's research, and today 50 years later, the main focus of the lab is still nuclear weaponry. As the mission of LLNL states: "Our primary mission is to ensure that the nation's nuclear weapons remain safe, secure, and reliable and to prevent the spread and use of nuclear weapons worldwide."

Since the mission of LLNL is still primarily nuclear weaponry, it makes me wonder about the intent of the biological research program. There is a fine line between defensive research and offensive research, and there is no guarantee that the BSL-3 facility at LLNL will not be used in the future for the manufacture of biological weaponry. Technically speaking under the guise of "national security" that the BSL-3 is being built on, down the road, the manufacturing of biological weaponry could also be considered national security.

With this in mind, my next concern is the threat of a terrorist attack on LLNL. With the building of the BSL-3 at the nuclear weapons facility, it does not send the message to other countries that the BSL-3 is being used purely for research purposes. LLNL is a concern as a target as it is, but adding another threat to other countries could put it over the top.

In addition to a terrorist attack, the threat of a terrorist break-in looms overhead. With so many deadly pathogens in one location, it is the prime target for a terrorist to break in and steal some to release into our country. With the past security concerns surrounding LLNL, this is not something that should be overlooked. A recent POGO (Project On Government Oversight) report found that during mock terrorist attacks at DOE facilities, the "terrorist" penetrated security and gained access to sensitive nuclear material over 50% of the time. This statistic is appallingly large, especially regarding nuclear material. I do not believe that the DOE's security problems will magically disappear when the BSL-3 facility is built at LLNL. If anything, I fear they may become worse. With the recent anthrax scare following the September 11 attacks and the concern

that the anthrax was obtained from one of our nation's own labs, this is a valid concern. Being responsible for releasing deadly pathogens into the country is not something that LLNL needs to have on their shoulders.

I am also concerned with the mode of transportation for the pathogens mentioned in the Environmental Assessment. On page 20 of the EA, it is stated the "Biological materials or infectious agents could only be shipped to LLNL by commercial package delivery services, the U.S. Postal Service (USPS), other authorized entity, or delivered to the receiving area from an origination point within LLNL by a designated LLNL employee acting as a courier". Three paragraphs down, the EA continues and says "Biological shipments to and from LLNL could initially be as much as ten time the current levels (4 in and 2 out per month now) of shipments to existing LLNL biological research laboratories." With this statistic there will be about 40 shipments in and 20 out each month, which is about 2 general shipments a day. My concern is regarding the safety of the shipments, especially traveling through USPS. I understand that the pathogens will be in safe containers, but the security of USPS itself is in question. The possibility of a shipment of pathogens being intercepted en route is something that has not been adequately analyzed in the EA. Especially with the increase in shipments, this is a danger that must be considered.

I would also like to address the issue of earthquakes and a BSL facility. The possibility of an earthquake was briefly mentioned, but not in adequate detail. On page 47 it is stated, "An earthquake, explosion, or similar event that would result in a breech or rupture of the facility's walls would be bounded by the hypothetical centrifuge-accident analysis of a *Coxiella burnetti* release from the proposed BSL-3 facility structure described later in this section. The probability of catastrophic events (due to earthquake) is already very low. The low probability of an earthquake capable of rupturing the facility containment, coupled with an additionally low probability of such an even occurring during a daytime activity where microorganism containment would be vulnerable, also make it an unlikely event."

This statement provides no significant data regarding how the conclusion was drawn about the probability of an earthquake. If in fact this statement is true, more data needs to be provided regarding the finding of this conclusion. Also, there is no significant data providing information as to why the hypothetical centrifuge accident analysis is comparable to an earthquake. What if an earthquake occurs while a lab technician is doing an injection and sticks himself? What if a lab technician is carrying a tray of petri dishes with bacterial cultures when the earthquake happens and the petri dishes get dropped on the floor, causing the bacteria to spread? These types of scenarios have not been adequately addressed for me to feel confident about the safety of the community.

A final concern I have is the need for two BSL-3 facilities at the DOE sites. In the Executive Summary on page ii, it states "DOE does not currently have under its administrative control any microbiological laboratory facility beyond Biosafety Level (BSL)-2." While this statement is currently true, I know that an Environment Assessment had been issued for the building of a BSL-3 facility at Los Alamos National Laboratory (LANL) on October 30, 2001 and that a Finding of No Significant Impact was Issued on February 26, 2002. Knowing all of this, I assume that plans are underway for the BSL-3 at LANL, which would render the statement in the Executive Summary

false in a matter of time. With this in mind, I wonder why it is necessary for the DOE to have two BSL-3 facilities under its jurisdiction, when the research could be done at one location, minimizing the potential risk.

Since DOE is currently looking to have two BSL-3 facilities at two of their nuclear weapons facilities, built within a short time frame, I would like to request a Programmatic Environmental Impact Statement (EIS). LLNL and LANL are introducing new programs that will be very intertwined with each other--these are not unrelated projects, and a full assessment of this new operation is needed.

In addition to the Programmatic EIS, I believe a project specific EIS also needs to be issued for LLNL. The draft EA that was issued does not adequately consider the impact on the environment, including providing significant data, relative accident scenarios, and a response to safety threats.

Signed:

Whitney Tiedemann
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-----Original Message-----
From: Robin Wood [mailto:robinwood@attbi.com]
Sent: Saturday, August 10, 2002 2:48 PM
To: Rich Mortensen
Subject: biosafety

Dear Mr. Mortensen,
I live one block from the lab. I want to know what plans the lab has in case there is an accident with the biosafety level 3 facility. How would neighbors such as myself be notified of a problem? How would we know how to protect ourselves?

Thanks in advance for your response,

Robin Wood